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V.3, No.2

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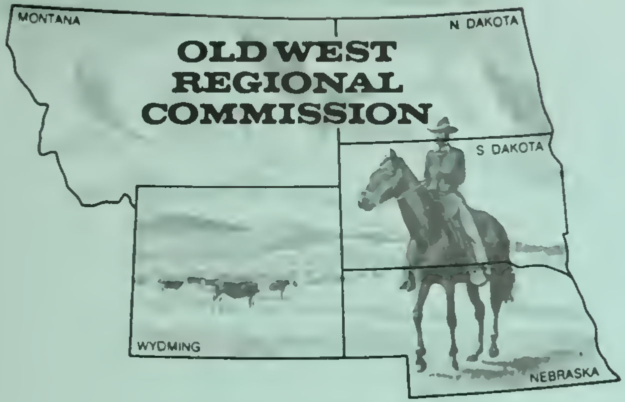

ENERGY RESEARCH INFORMATION SYSTEM

Projects Report

A Program of:

The Old West Regional Commission
Billings, Montana

in cooperation with

Argonne National Laboratory
and
U.S. Geological Survey

Vol. 3, No. 2
December 1978

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ENERGY RESEARCH INFORMATION SYSTEM

PROJECTS REPORT

VOLUME 3, NUMBER 2

OLD WEST REGIONAL COMMISSION

AND

U.S. GEOLOGICAL SURVEY, WATER RESOURCES DIVISION
U.S. DEPT. OF ENERGY, ARGONNE NATIONAL LABORATORY

BILLINGS, MONTANA

DECEMBER, 1978

PREPARED BY

COMPILERS: CATHY BOYD AND JANET JELINEK
OLD WEST REGIONAL COMMISSION
HEDDEN-EMPIRE BUILDING, SUITE 228
BILLINGS, MONTANA 59101

IN COOPERATION WITH

U.S. GEOLOGICAL SURVEY, WATER RESOURCES DIVISION

AND

U.S. DEPT. OF ENERGY, ARGONNE NATIONAL LABORATORY

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INTRODUCTION

The Energy Research Information System (ERIS) is a service administered by the Old West Regional Commission in response to the need for current information on research activities in the region's rapidly growing and changing field of energy. Cooperating with the Commission on ERIS are the U.S. Geological Survey and Argonne National Laboratory.

The purpose of ERIS is to compile and make available to the users in the Region an up-to-date inventory of ongoing and recently completed energy-related research projects.

The term "energy-related" covers a broad spectrum of activities and encompasses a large volume of research. Nonetheless, ERIS attempts to report energy-related research projects in as comprehensive a manner as possible. The subject areas covered are: reclamation, energy conversion, and land use research, socioeconomic impact and renewable energy resources studies, as well as programs related to energy development which do not necessarily involve research.

By facilitating communication among researchers and allowing public and private sector decision-makers access to Regional energy research, ERIS aims to improve information exchanges among energy research users. The system can be used as an aid in conducting research, avoiding duplication of effort, and pinpointing areas of additional research need.

The geographical focus of ERIS is the Old West Region--Montana, Nebraska, North Dakota, South Dakota, and Wyoming. However, peripheral states or nationwide efforts are covered as they are related to regional work.

The compilation of energy research projects in the ERIS reports has been accomplished by combining ERIS's own information-gathering efforts with those of other clearinghouses--most notably, Oak Ridge National Laboratory, the Smithsonian Science Information Exchange, the Montana Energy Office, the North Dakota Regional Environmental Assessment Program, the University of Wyoming, Rocky Mountain Institute on Energy and Environment and other energy agencies in the Old West Region.

Use of the Energy Research Information System

ERIS Projects Reports

ERIS information is stored in a computerized data base. As the data base grows, periodic reports are printed which list the latest contents of the data base. the first such report was issued in November, 1975.

Access to ERIS is available through subject oriented sections and through the indexes located at the end of the listings. These indexes are: Location, Personal Name, Organization, and Subject Keyword. Instructions for the use of the indexes precede each section.

Please note that ERIS provides a listing but not the actual document referred to in the publication section of each abstract. Document delivery is best accomplished by contacting the local library system or by contacting the investigator or sponsor of any particular project.

All ERIS listings are available from the ERIS staff or from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161

Computer Search Service

The holdings of ERIS are computerized, allowing for flexibility in conducting special searches of the data base. The computer search service is offered as a complement to the ERIS Projects Reports. If your inquiry concerning energy research cannot be answered by manual use of the reports, contact a member of the ERIS staff and request that a special search be conducted.

ERIS is part of the Research in Progress File (RIP) and the Energy R&D Project File (ERD) of the U.S. Dept. of Energy's RECON Information Retrieval System. Designated RECON users may also access ERIS through their own terminals.

****

Please direct your inquiries to: ERIS,
Old West Regional Commission,
228 Hedden-Empire Building, Billings, MT 59101
406/657-6665 (commercial) or 585-6665 (FTS)

The Old West Regional Commission is a Federal-State partnership designed to address regional economic problems and stimulate orderly economic growth in the states of Montana, Nebraska, North Dakota, South Dakota and Wyoming. Established in 1972 under the Public Works and Economic Development Act of 1965, it is one of eight such commissions in the United States.

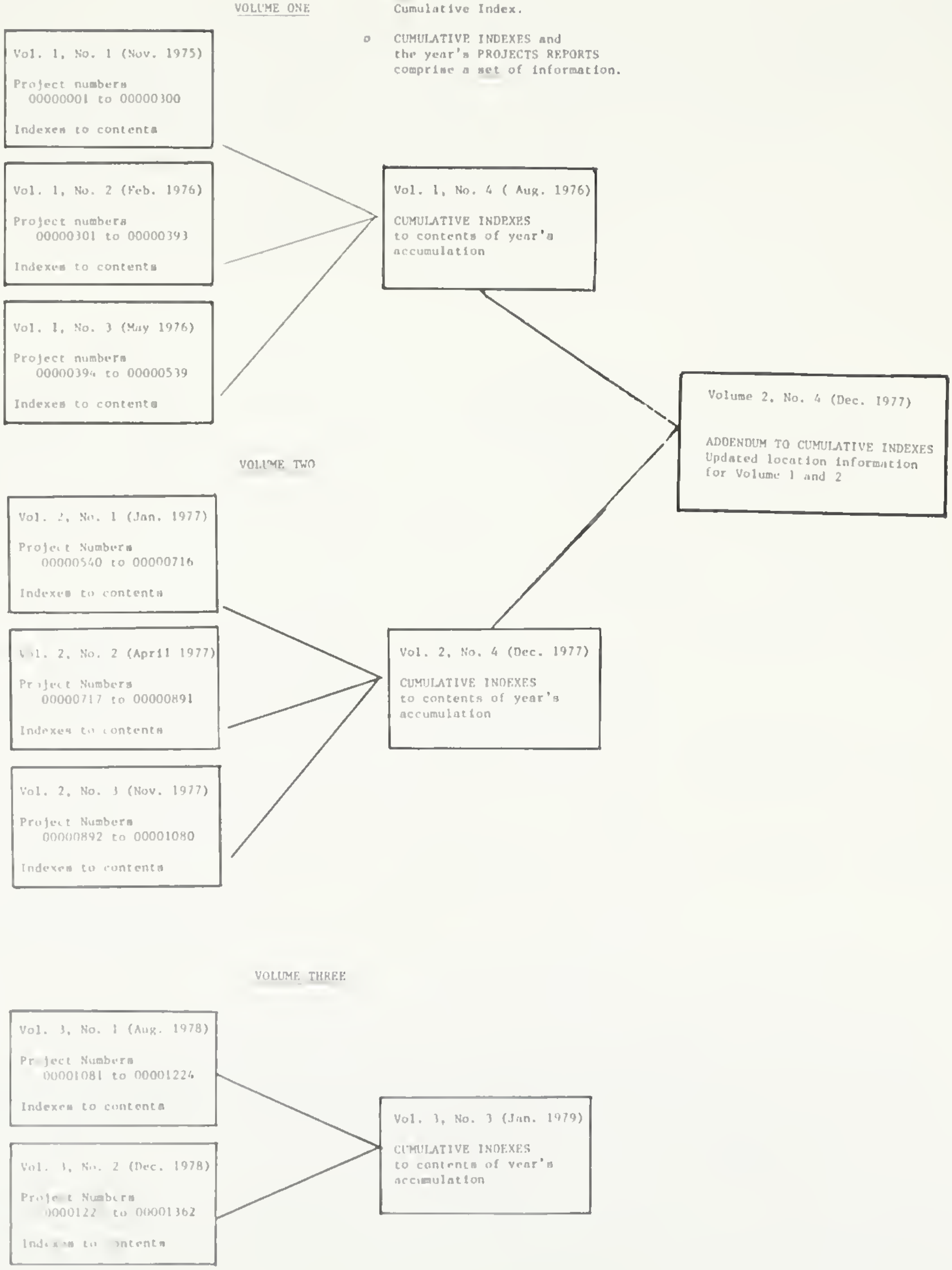
The Land Reclamation Program at Argonne National Laboratory is conducting coordinated applied and basic research into the physical and ecological problems of land reclamation related to surface mining of coal and developing cost-effective techniques for reclaiming/rehabilitating mined coal land to productive end uses. The purpose of this program is to conduct integrated research and development projects focused on near- and long-term reclamation problems in all major U.S. coal resource regions including Alaska and to coordinate, evaluate, and disseminate the results of related studies conducted at other research institutions.

The function of the Water Resources Division of the Geological Survey is to provide data and reports on the availability and quality of water required for conversion of coal and oilshale to other forms of energy, to monitor the effects of mining and related developments on regional water systems, and to conduct investigations and research in methods of measuring and predicting the effects of mining and associated operations on local and regional water users.

HOW ERIS IS ORGANIZED

- o PROJECTS REPORTS (formerly called Quarterly Reports) contain descriptions of energy research in the Old West Region.
- o Each REPORT is indexed according to Location, Name, Organization, and Subject.

- o CUMULATIVE INDEXES are provided once a year to incorporate previous indexes of the year's PROJECTS REPORTS under one cover.
- o Project descriptions are not included with the Cumulative Index.
- o CUMULATIVE INDEXES and the year's PROJECTS REPORTS comprise a set of information.



REPORTING FORM
ENERGY RESEARCH INFORMATION SYSTEM
Old West Regional Commission

INSTRUCTIONS: Please complete the relevant categories of the Reporting Form for each energy-related project currently being conducted or recently completed by your organization in the States of the Old West Region. If an umbrella project covers several separate studies, fill out a form for each one, as well as for the umbrella project. If you want any of the information you provide to be omitted from ERIS publications, make a note of this in Category 17, "Special Instructions for Proprietary Information."

In order to assist us in assigning keywords for computer access to your research information, we ask that you circle the most descriptive words and phrases of the Title and Abstract. If necessary, add additional terms of your own choosing.

If you are amending previously submitted information, please note this on the Reporting Form.

PLEASE RETURN COMPLETED REPORTING FORM(S) TO: ERIS, OLD WEST REGIONAL COMMISSION, 228 HEDDEN-EMPIR
BLDG., BILLINGS, MT 59101. PHONE: (406) 657-6665 (Commercial) or 585-6665 (FTS).

1. Date prepared ______________________ Respondent ______________________

   Check one: ________Original Information ________Amendment to ERIS Project No.________

2. **PROJECT/PROGRAM TITLE** (circle keywords) ______________________

   ____

   ____

3. **PROJECT NUMBER** (descriptive no. used by your organization) ______________________

4. **PRINCIPAL INVESTIGATOR** (include organization name and address)

   INVESTIGATOR______________________PHONE NO.____________

   ORGANIZATION ______________________

   ADDRESS ______________________

   ____

   OTHER INVESTIGATORS:

   ____

   ____

5. **RESEARCH INSTITUTION** (institution/organization where or through which research is performed if different than 4 above)

   ORGANIZATION ______________________PHONE NO.____________

   ADDRESS ______________________

   ____

6. **COOPERATOR(S)** (organization(s) which provides time and/or resources toward the project but does not conduct, supervise, or fund the research)

ORGANIZATION ____________________

PROJECT MONITOR ____________________ PHONE NO. __________

ADDRESS ____________________

____

7. **PRIMARY SPONSOR** (organization which provides funds)

ORGANIZATION ____________________

PROJECT MONITOR ____________________ PHONE NO. __________

ADDRESS ____________________

____

8. **OTHER SPONSORS** (provide names of organizations which provide secondary funds)

____

____

____

9-10. **FUNDING AMOUNTS**

Type of accounting period: __________ Calendar year __________ Fiscal Year

Enter the **TOTALS** from each sponsor in the appropriate blanks. If the breakdown is known, enter the yearly amounts in the appropriate blanks.

Organizations from 7 and 8 above	197___	197___	197___	Total
(Primary) __________	$ ______	$ ______	$ ______	$ ______
(Other) __________	$ ______	$ ______	$ ______	$ ______
__________	$ ______	$ ______	$ ______	$ ______
__________	$ ______	$ ______	$ ______	$ ______
Total Funding				$ ______

11. **TIME FRAME:** Starting Date ______ Ending Date ______
mo. day yr. mo. day yr.

12. **ACTUAL COMPLETION DATE** (leave blank if not completed) ______
mo. day yr.

13. **LOCATION:** States and Counties; other location information — Region, River Basin, Cities, Township/Range/Section, etc.

STATES AND COUNTIES ______

OTHER LOCATION INFORMATION ______

14. **ABSTRACT:** Problem, Objectives, and Approach (in free form, 100-200 words)
PLEASE CIRCLE KEYWORDS AND PHRASES. Add other descriptors if necessary.

14-A. **NUMBER OF FULL TIME EMPLOYEES** and graduate students, excluding clerical personnel. If several people work part time, add the fractions of their time spent on the project and round off to the nearest whole number.

Years	Scientists & Engineers	Graduate Students	Totals
197__			
197__			
197__			

15. **REPORTS AND PUBLICATIONS** (title, authors, report number, date, issuing agency)

16. **AVAILABILITY OF REPORTS AND PUBLICATIONS** (indicate organization and mailing address where reports can be obtained; also indicate cost and order number if appropriate)

17. **SPECIAL INSTRUCTIONS FOR PROPRIETARY INFORMATION** (enter category number and information which you desire to be omitted from published material)

18. **A. TYPE OF STUDY OR PROGRAM**
(check all that apply)

1) ☐ Basic research

2) ☐ Applied research

3) ☐ Demonstration project or program not involving research (eg, a community technical assistance program)

4) Environmental Impact Statement

5) ☐ Other________________________

B. TYPE OF DATA COLLECTED
(check all that apply)

1) ☐ Primary data sources
  a. ☐ Field study
  b. ☐ Lab. study
  c. ☐ Both of the above

2) ☐ Secondary data sources

3) ☐ Both 1 and 2 above

C. **PROJECT AFFILIATION** (check one of the following)

1) ☐ The study described on this Reporting Form is an umbrella project or program. It encompasses two (2) or more separate studies which are subcontracted and/or of differing subject content. Please provide Reporting Forms for the separate projects or incorporate them onto this Reporting Form.

2) ☐ The study described on this Reporting Form is a part of an umbrella project or program. Please provide umbrella project name and overall coordinating organization below.

____

____

3) ☐ The study is a separate project or program in and of itself.

THANK YOU FOR COMPLETING THIS REPORTING FORM.

r.12/77

ENERGY RESEARCH INFORMATION SYSTEM

1.1 GENERAL

*****

*****

00001225
PROJECT TITLE
A STUDY OF A REGIONAL COAL LABORATORY FOR THE NORTHERN GREAT PLAINS PROVINCE
PROJECT NUMBER
10871251
INVESTIGATOR(S)
DR. ISAAC ELIEZAR / DR. DENNIS BLACKKETTER
RESEARCH INSTITUTION
MONTANA STATE UNIV. / BOZEMAN, MT 59717
PRIMARY SPONSOR
OLD WEST REGIONAL COMMISSION / DR. KENNETH A. BLACKBURN / BILLINGS, MT 59101
PRIMARY FUNDING AMOUNT
8,000
TIME FRAME
JULY, 1978 TO FEBRUARY 1979
LOCATION
MT / NE / ND / SD / WY
ABSTRACT
THE COMMISSION, WISHING TO ENCOURAGE AND SUPPORT THE DEVELOPMENT OF A COAL RESEARCH LABORATORY IN THE REGION, ALLOTTED FUNDS TO SUPPORT THE REGION'S UNIVERSITIES IN ACQUIRING THIS TYPE OF INSTITUTION. THEREFORE, A TASK FORCE REPRESENTING THE FIVE STATES AND HIGHER EDUCATION WAS ORGANIZED TO CONSIDER AND RELATE TO THE COAL RESEARCH LABORATORY ISSUE. SEVERAL MEETINGS WERE HELD WITH THE TASK FORCE CONCLUDING THAT A REGIONAL LABORATORY WAS DESIRABLE AND MOST LIKELY TO SUCCEED AND THAT A CONSULTANT WAS NECESSARY TO DEVELOP A VIABLE REGIONAL DESIGN, NECESSARY DATA, AND PRE-PROPOSAL.
THE SPECIFIC OBJECTIVES ARE: 1) TO DEFINE THE STRUCTURE OF A UNIVERSITY COAL LABORATORY SUCH THAT THE INTENT OF OF TITLE VIII IS FULFILLED BY THE GROUP OF UNIVERSITIES REPRESENTING THE OLD WEST REGION: 2) TO IDENTIFY COAL RESEARCH PROBLEMS OF NATIONAL OR REGIONAL IMPORTANCE WHICH ARE PARTICULARLY AND PERHAPS UNIQUELY SUITED FOR STUDY IN THE "OLD WEST" COAL LABORATORY RATHER THAN IN LABORATORIES ELSEWHERE IN THE COUNTRY: 3) TO INVENTORY THE REGIONAL UNIVERSITY RESEARCH AND EDUCATIONAL CAPABILITY AS WELL AS THAT OF OTHER STATE OR REGIONAL INSTITUTIONS AND AGENCIES INVOLVED IN EDUCATIONAL, RESEARCH OR POLICY ACTIVITIES RELATED TO COAL: AND, 4) TO MATCH THE REQUIREMENTS OF THE COAL LABORATORY (AS IDENTIFIED IN 1 AND 2 ABOVE) WITH THE REGIONAL CAPABILITIES (AS IDENTIFIED IN 3) IN ORDER TO ANSWER RESEARCH QUESTIONS.

00001226
PROJECT TITLE
ENVIRONMENTAL IMPACT STUDY ON COAL DEVELOPMENT-CROW INDIAN RESERVATION
INVESTIGATOR(S)
WAYNE F. STEPHENS / ARNE M. DEGN / D.E. GENTZ / P. KAPALKA/ J. GROTRO
RESEARCH INSTITUTION
U.S. BUREAU OF INDIAN AFFAIRS / PLANNING SUPPORT GROUP/
316 NORTH 26TH STREET, BILLINGS, MT 59101/(406) 657-6321
PRIMARY SPONSOR
U.S. BUREAU OF INDIAN AFFAIRS, PLANNING SUPPORT GROUP
PRIMARY FUNDING AMOUNT
69,500
TIME FRAME
MAY 1978 TO NOVEMBER 1978
LOCATION
MT / CROW INDIAN RESERVATION
ABSTRACT
THE OBJECTIVE OF THIS STUDY IS TO PROVIDE THE CROW TRIBE, PLANNERS AND OTHER INTERESTED PEOPLE WITH INFORMATION TO ASSIST THEM IN FUTURE DECISIONS REGARDING COAL DEVELOPMENT. THE APPROACH WILL EXAMINE THE IMPACTS OF THREE PRODUCTION LEVELS ON THE SOCIOECONOMICS AND NATURAL RESOURCES OF THE AREA.

*****

00001227
PROJECT TITLE
ENERGY: THE NEXT TWENTY YEARS POWDER RIVER BASIN, WYOMING
PROJECT NUMBER
9530-01565
INVESTIGATOR(S)
HANS LANDBERG
RESEARCH INSTITUTION
RESOURCES FOR THE FUTURE, CENTER FOR ENERGY POLICY RE-Y
SEARCH / 1755 MASS. AVE., N.W. / WASHINGTON, D. C.
(202) 462-4400
PRIMARY SPONSOR
FORD FOUNDATION / ROBERT TOLLES / 320 E 43RD ST. /SUN-
NEW YORK, NY (212) 573-4810
PRIMARY FUNDING AMOUNT
600,000
TIME FRAME
MARCH 1978 TO JUNE 1979

LOCATION
WY / EASTERN POWDER RIVER BASIN / WYODAK ANDERSON COAL BEDS
ABSTRACT
THIS STUDY WILL COMPARE COAL WITH OTHER ENERGY OPTIONS AVAILABLE TO THE U. S. OVER THE NEXT TWENTY YEARS. AMONG THE QUESTIONS TO BE EXAMINED BY THE STUDY ARE: TO WHAT EXTENT WILL INCREASED CONSUMPTION OF COAL INCREASE THE RISK OF DAMAGE TO HUMAN HEALTH AND TO THE ENVIRONMENTAL SYSTEM. INCLUDING CLIMATE AND SOIL FERTILITY? WHAT ARE THE TECHNOLOGICAL. ENVIRONMENTAL. HEALTH AND INSTITUTIONAL CONSTRAINTS REGARDING A) INCREASED COAL PRODUCTION AND B) CONVERSION OF COAL TO SYNTHETIC FUELS? HOW RELIABLE ARE THE ESTIMATES OF DISCOVERABLE AND RECOVERABLE OIL AND GAS RESOURCES. BOTH IN THE U.S. AND ELSEWHERE? CAN THE U.S. AND OTHER MAJOR OIL IMPORTERS COPE WITH THE CONTINUING AND PROBABLY RISING LEVEL OF OIL IMPORTS WITHOUT SEVERE DAMAGE TO THEIR DOMESTIC ECONOMIES. INTERNATIONAL TRADE. AND THE INTERNATIONAL MONETARY SYSTEM? WHAT ARE THE COSTS AND BENEFITS OF INCREASED ENERGY CONSERVATION. PARTICULARLY ITS EFFECT ON ECONOMIC GROWTH AND WELFARE? TO WHAT EXTENT WILL OTHER ENERGY SOURCES. INCLUDING NUCLEAR AND SOLAR ENERGY. MEET THE NATION'S ENERGY NEEDS BY THE END OF THE CENTURY? WHAT ARE THE ENERGY OPTIONS FACED BY OTHER DEVELOPED NATIONS? HOW WILL THEY AFFECT THE U.S. AND HOW WILL U.S. POLICIES AFFECT THE REST OF THE WORLD?

*****

00001228
PROJECT TITLE
A STUDY OF WESTERN COAL LEASING AND DEVELOPMENT
INVESTIGATOR(S)
JAMES CANNON / BART WALKER
RESEARCH INSTITUTION
COUNCIL ON ECONOMIC PRIORITIES / 84 FIFTH AVE. / N.Y.. N.Y. 10011 / (212) 691-8550
PRIMARY SPONSOR
NEW YORK COMMUNITY TRUST
SECONDARY SPONSOR
SHALAN FOUNDATION / NU LAMBDA FOUNDATION / CEP GENERAL FUNDS
PRIMARY FUNDING AMOUNT
80.000
TIME FRAME
JULY 1977 TO SEPTEMBER 1978
STATUS
COMPLETED SEPTEMBER 1977
LOCATION
CO / MT / NM / ND / UT / WY
ABSTRACT
THIS STUDY IS BOTH AN UPDATE AND EXTENSION OF THE COUNCIL ON ECONOMIC PRIORITIES' RESEARCH ON WESTERN COAL DEVELOPMENT. IT CHRONICLES THE HISTORY OF THE FEDERAL LEASING PROGRAMS BETWEEN 1973 AND 1977. IT INCLUDES AN ANALYSIS OF LEASING PROGRAMS OPERATED BY STATE GOVERNMENTS IN SIX WESTERN COAL-BEARING STATES. IT EVALUATES THE CURRENT STATUS OF COAL DEVELOPMENT IN EACH STATE AND ASCERTAINS EACH STATE'S FORMAL AND/OR INFORMAL COAL POLICY. IN ADDITION. EACH INDIVIDUAL FEDERAL. STATE AND INDIAN COAL LEASE HAS BEEN EXAMINED AND BASIC DATA CATALOGUED ABOUT EACH LEASE.
REPORTS AND PUBLICATIONS
CANNON. JAMES S. MINE CONTROL: WESTERN COAL LEASING AND DEVELOPMENT. COUNCIL ON ECONOMIC PRIORITIES. N.Y. 1978.

*****

00001229
PROJECT TITLE
ENVIRONMENTAL ASPECTS OF COAL DEVELOPMENT. EASTERN POWDER RIVER BASIN. WYOMING
PROJECT NUMBER
9530-01565
INVESTIGATOR(S)
C. A. COATES
RESEARCH INSTITUTION
U.S. GEOLOGICAL SURVEY. BR. OF CENTRAL ENVIRON. GEOLOGY BOX 25046 / DENVER FEDERAL CENTER/ DENVER CO 80225
PRIMARY SPONSOR
U.S. GEOLOGICAL SURVEY. GEOLOGIC DIV. / 12201 SUNRISE VALLEY DR. / RESTON. VA 22092
TIME FRAME
OCTOBER 1976 TO SEPTEMBER 1978
LOCATION
WY / EASTERN POWDER RIVER BASIN / WYODAK-ANDERSON COAL BEDS
ABSTRACT
ACQUIRE. COMPILE. AND INTERPRET BASIC LAND AND RESOURCE INFORMATION FOR PURPOSES OF EVALUATING POTENTIAL ENVIRONMENTAL EFFECTS OF LARGE-SCALE SURFACE MINING OF THE WYODAK-ANDERSON COAL BED(S) ON THE EASTERN MARGIN OF THE POWDER RIVER BASIN. WYOMING.

00001230
PROJECT TITLE
THE FLORA OF CAMPBELL COUNTY, WYOMING AND ADJACENT COAL MINING AREAS
INVESTIGATOR(S)
DR. RONALD L. HARTMAN / UNIV. OF WYOMING, DEPT. OF BOTANY
(307)766-2236
RESEARCH INSTITUTION
UNIV. OF WYOMING, ENIFE
BOX 3965, UNIV. STATION / LARAMIE, WY 82071
(307)766-6760
PRIMARY SPONSOR
UNIV. OF WYOMING, ENIFE
ESTHER SMITH
PRIMARY FUNDING AMOUNT
1978 - 14,762
TIME FRAME
MAY 1978 TO MAY 1979
LOCATION
WY / CAMPBELL CO. / POWDER RIVER BASIN
ABSTRACT

THE PLANT LIFE OF CAMPBELL CO. IS THE MOST POORLY KNOWN FOR ANY AREA OF ITS SIZE IN WYOMING. ACCORDING TO RECORDS AT THE ROCKY MOUNTAIN HERBARIUM, ONLY 708 SPECIES OF VASCULAR PLANTS ARE KNOWN TO OCCUR IN THE COUNTY. CONSIDERING ITS SIZE AND HABITAT DIVERSITY, MORE THAN 800 SPECIES PROBABLY OCCUR THERE.

THE OBJECTIVES OF THIS STUDY ARE 1) TO INVENTORY THE PLANT SPECIES OCCURRING IN CAMPBELL CO. AND ADJACENT AREAS; 2) TO DOCUMENT THE DISTRIBUTION, ABUNDANCE, AND HABITAT SPECIFICITIES OF THESE SPECIES; 3) TO PRODUCE A FLORA OF THE COUNTY WHICH WILL ENABLE INDIVIDUALS TO IDENTIFY THE SPECIES OF THIS AREA; AND 4) TO INCORPORATE THESE DATA INTO A COMPUTERIZED DATA BANK.

THUS FAR, MORE THAN 8,000 SPECIMENS HAVE BEEN COLLECTED. ONCE THE FIELD PHASE OF THE STUDY IS COMPLETE, THE PLANT WILL BE IDENTIFIED AND THE FLORA WRITTEN. OUR INTENTION IS TO INCLUDE IN THE FLORA ALL SPECIES KNOWN TO OCCUR IN THE POWDER RIVER BASIN SO IT WILL BE OF USE THROUGHOUT THIS NATURAL PROVINCE.

* * * * *

00001231
PROJECT TITLE
NUTRITIONAL VALUE OF NATIVE SPECIES GROWING ON OLD AND NEW MINE SPOILS
PROJECT NUMBER
2-6000-709
INVESTIGATOR(S)
FRANK F. MUNSHOWER / DENNIS R. NEUMAN
RESEARCH INSTITUTION
MONTANA STATE UNIV., DEPT. OF ANIMAL & RANGE SCIENCES
BOZEMAN, MT 59717/ (406)994-4651
PRIMARY SPONSOR
U.S. DEPT. OF AGRICULTURE, SEA-CR
PRIMARY FUNDING AMOUNT
26,000
TIME FRAME
SEPTEMBER 1978 TO AUGUST 1979
LOCATION
MT / COLSTRIP AREA
ABSTRACT

THE OBJECTIVE OF THIS STUDY IS TO DEFINE DIFFERENCES BETWEEN VEGETATION GROWING ON OLD AND NEW MINE SPOILS AND NATIVE RANGE VEGETATION. PARAMETERS UNDER CONSIDERATION INCLUDE ZINC, COPPER, MANGANESE, MAGNESIUM, CALCIUM, POTASSIUM, PROTEIN, FAT, FIBER, AND IN CERTAIN PLANTS THE ELEMENTS SELENIUM AND MOLYBDENUM.

* * * * *

00001232
PROJECT TITLE
PYRITIC COAL SCRAPINGS AS A SURFACE AMENDMENT IN RECLAMATION OF STRIP MINED LANDS
INVESTIGATOR(S)
INGVARD B. JENSEN / RICHARD L. HODDER
RESEARCH INSTITUTION
MONTANA STATE UNIV., AG. EXP. STATION / BOZEMAN, MT
(406)994-4821
PRIMARY SPONSOR
U.S. DEPT. OF AGRICULTURE, SEA
SECONDARY SPONSOR
U.S. EPA
PRIMARY FUNDING AMOUNT
16,000
TIME FRAME
AUGUST 1978 TO AUGUST 1979
LOCATION
MT / DECKER MINE
ABSTRACT

LABORATORY EXPERIMENTATION WILL BE CONDUCTED TO DETERMINE PROPERTIES OF COAL SCRAPINGS WHICH WILL BENEFIT SALINE-ALKALINE SOILS. GREENHOUSE BIOLOGICAL STUDIES WILL BE CONDUCTED TO HASTEN THE BIOLOGICAL, CHEMICAL AND PHYSICAL ACTIVITY IN HOMOGENEOUS MIXTURES OF PYRITIC COAL AND MINE SPOILS. PLOTS WILL BE INSTALLED AT THE DECKER COAL MINE TO INITIATE STUDY OF THREE PYRITIC COAL AMENDMENT TREATMENT

OBJECTIVES OF THE STUDY ARE AS FOLLOWS: TO DETERMINE THE EFFECT OF ACIDIC COAL SEAM SCRAPINGS ON PH IN SODIC ALKALINE OR SALINE SPOILS: TO EVALUATE THE EFFECT OF COAL SEAM SCRAPINGS ON PLANT ESTABLISHMENT: TO DETERMINE THE EROSION CONTROL PROPERTIES OF COAL SEAM SCRAPING MULCHES.

*****

00001233

PROJECT TITLE

COMPUTERIZATION OF SEMI-ARID MINELAND PLANT SPECIES

PROJECT NUMBER

G&C 707

INVESTIGATOR(S)

RICHARD HODDER

RESEARCH INSTITUTION

MONTANA STATE UNIV., AG. EXP. STATION / BOZEMAN, MT 59717/ (406)994-4821

PRIMARY SPONSOR

U.S. DEPT. OF AGRICULTURE, SEA-CR / BELTSVILLE, MD

PRIMARY FUNDING AMOUNT

20,724

TIME FRAME

OCTOBER 1978 TO OCTOBER 1979

LOCATION

MT

ABSTRACT

THE PURPOSE OF THIS PROJECT IS TO (1) DEVELOP MINELAND SPECIES ECOLOGICAL PARAMETERS QUESTIONNAIRE FORM: (2) CATALOG COMMON PLANT SPECIES AS TO ECOLOGICAL GROWTH REQUIREMENTS FOUND ON REPRESENTAIVE MINE SITES IN SEMI-ARID WEST: (3) COMPUTERIZE DATA FOR ENTRY INTO WORLD PLANT BANK; (4) DEVELOP SIMPLE INTERROGATION SYSTEM TO OBTAIN INFORMATION OUTPUT TO FORMULATE ADAPTABLE SEED MIXTURES FOR REVEGETATION OF SPECIFIC SITES; AND (5) USE AVAILABLE WORLD PLANT BANK OUTPUT TO DETERMINE CROP POTENTIAL ON MINE SITES AND RELATIVE CROP PRODUCTIVITY AS AFFECTED BY DEGREE OF MANAGEMENT (FERTILIZER, IRRIGATION, ETC.).

*****

00001234

PROJECT TITLE

ELEMENT AVAILABILITY - PLANTS

PROJECT NUMBER

9760-01877

INVESTIGATOR(S)

L. P. GOUGH

RESEARCH INSTITUTION

U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV. / DENVER FEDERAL CENTER, BOX 25046 / DENVER, CO 80225

PRIMARY SPONSOR

U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV.

PRIMARY FUNDING AMOUNT

49,000

TIME FRAME

OCTOBER 1976 TO SEPTEMBER 1977

LOCATION

MT / NM / ND / SD / WY

ABSTRACT

ATTEMPTS WILL BE MADE TO IDENTIFY ONE OR MORE METHODS OF CHEMICAL SOLUTION EXTRACTION OF ELEMENTS FROM SOILS OR FRACTIONS OF SOILS OF THE NORTHERN GREAT PLAINS WHICH, ALONE OR IN COMBINATION WITH SOME PHYSICAL AND CHEMICAL SOIL PROPERTIES, MAY BE CLOSELY CORRELATED TO THE ELEMENT CONCENTRATES OF THE PLANTS FOUND GROWING NATURALLY UPON THEM. NEW PLANT AND SOIL SAMPLING EFFORTS, DIRECTED AT THE COAL-RICH SAN JUAN BASIN, WILL ALSO BE INITIATED THIS CURRENT YEAR.

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00001235

PROJECT TITLE

SOIL DEVELOPMENT ON MINE SPOIL AND NITRATES AS A POTENTIAL CONTAMINANT

PROJECT NUMBER

0071201; WY000997-WS

INVESTIGATOR(S)

P. C. SINGLETON

RESEARCH INSTITUTION

UNIV. OF WYOMING, AG. EXP. STATION / P.O. BOX 3354, UNIVERSITY STATION / LARAMIE, WY 82071

PRIMARY SPONSOR

U.S. DEPT. OF AGRICULTURE, COOP. STATE RESEARCH SERVICE

TIME FRAME

OCTOBER 1976 TO SEPTEMBER 1978

LOCATION

WY

ABSTRACT

EVALUATE SOIL CHARACTERISTICS DEVELOPED UNDER SPOIL BANK MATERIALS THAT HAVE NOT BEEN SHAPED OR TOPSOILED AND COMPARE TO CHARACTERISTICS DEVELOPED UNDER SPOIL BANK MATERIALS THAT HAVE SHAPED, TOPSOILED AND REVEGETATED. MEASURE LEVELS OF SOIL NITRATE DEVELOPED IN STOCKPILED MATERIALS AND DETERMINE THEIR DISPOSITION IN THE ENVIRONMENT. APPROACH: MORPHOLOGICAL FEATURES DEVELOPED IN OLD AND NEW SPOIL BAND MATERIALS WILL BE DETERMINED AT VARIOUS DEPTHS IN THE NEW PROFILE. SAMPLES WILL BE COLLECTED AT SPECIFIED DEPTHS AND ANALYZED FOR SIO (2), PH, E.C. (S), AI(2)O(3) CAO, MGO, K(2), NA (2) O, ORGANIC MATTER, CACO(3), AND TEXTURE TO EVALUATE CHANGES THAT ARE OCCURING IN THE SPOIL. MOISTURE MEASURING ACCESS TUBES WILL BE IMPLEMENTED

TO A DEPTH OF 240 CM IN SPOIL BANK MATERIALS TO DETERMINE MOISTURE PENETRATION OVER A PERIOD OF TIME. SOIL SAMPLES WILL BE COLLECTED AT 15 CM INTERVALS TO A DEPTH OF 120 CM FOR NO(3)-N DETERMINATION AND RUNOFF WATER WILL BE COLLECTED TO MEASURE NO(3)-N BEING REMOVED FROM THE SPOIL MATERIAL.

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00001236

PROJECT TITLE

IMPACT OF WATER AND LAND TRANSFERS ASSOCIATED WITH COAL DEVELOPMENT IN EASTERN WYOMING

PROJECT NUMBER

0070585: WYO-136-077

INVESTIGATOR(S)

J. J. JACOBS / C. OLSON / C. VANVIG

RESEARCH INSTITUTION

UNIV. ON WYOMING, AG. EXP. STATION / UNIVERSITY STATION,
P.O. BOX 3944 / LARAMIE, WY 82071

PRIMARY SPONSOR

U.S. DEPT. OF AGRICULTURE, COOP. STATE RESEARCH SERVICE

TIME FRAME

OCTOBER 1976 TO SEPTEMBER 1978

LOCATION

WY

ABSTRACT

IDENTIFY THE NATURE AND MAGNITUDE OF WATER AND LAND TRANSFERS IN CONNECTION WITH COAL DEVELOPMENTS IN NORTHEASTERN WYOMING; AND ESTIMATE THE POTENTIAL IMPACT ON AGRICULTURE OF ALTERNATIVE LEVELS AND TYPES OF COAL-ENERGY DEVELOPMENT. OBJECTIVE ONE WILL REQUIRE SURVEY WORK TO OBTAIN INFORMATION ON EXISTING WATER AND LAND TRANSFER BETWEEN RANCHERS AND COAL DEVELOPMENT INTERESTS. FOR OBJECTIVE 2, A LINEAR PROGRAMMING MODEL WILL BE USED TO ESTIMATE THE IMPACT ON AGRICULTURAL PRODUCTION AND INCOME ASSOCIATED WITH ALTERNATIVE LEVELS AND TYPES OF COAL-ENERGY DEVELOPMENT. DATA ON CROP AND LIVESTOCK PRODUCTION, WATER DEMANDS, CURRENT AND POTENTIAL TRANSFERS OF LAND AND WATER, AND EXPECTED LEVELS OF COAL-ENERGY DEVELOPMENT WILL BE USED IN THE LINEAR PROGRAMMING MODEL.

STUDY AFFILIATION

PART OF 'IMPACTS OF COAL-ENERGY DEVELOPMENT IN NORTHEAST WY ON AGRICULTURE AND RELATED ENVIRONMENTAL ASPECTS' PROJECT NUMBER 0000 , ENERGY RESEARCH INFORMATION SYSTEM PROJECTS REPORT, VOLUME 3, NO. 2, DECEMBER 1978.

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00001237

PROJECT TITLE

IMPACTS OF COAL-ENERGY DEVELOPMENT IN N. E. WYOMING ON AGRICULTURE AND RELATED ENVIRONMENT ASPECTS

PROJECT NUMBER

0071197: WY000998-WS

INVESTIGATOR(S)

J.J. JACOBS / A. VANVIG

RESEARCH INSTITUTION

UNIV. OF WYOMING, AG. EXP. STATION / UNIVERSITY STATION,
P.O. BOX 3354 / LARAMIE, WY 82071

PRIMARY SPONSOR

U.S. DEPT. OF AGRICULTURE, COOP. STATE RESEARCH SERVICE /
WASHINGTON, D.C. 20250

TIME FRAME

OCTOBER 1976 TO SEPTEMBER 1978

LOCATION

WY

ABSTRACT

IDENTIFY THE NATURE AND MAGNITUDE OF LAND AND WATER TRANSFERS ASSOCIATED WITH COAL-ENERGY DEVELOPMENT IN NORTHEASTERN WYOMING. QUANTIFY THE BENEFITS AND COSTS OF COAL MINED LAND RECLAMATION. EVALUATE THE POTENTIAL IMPACT OF COAL MINES ON THE SURROUNDING GROUNDWATER AQUIFER, AND ESTIMATE THE IMPACT ON AGRICULTURE OF ALTERNATIVE LEVELS ANB TYPES OF COAL-ENERGY DEVELOPMENT. DATA WILL BE COLLECTED ON LAND, WATER AND MINERAL TRANSFERS AND LEASES OCCURING BETWEEN RANCHERS AND COAL DEVELOPMENT INTERESTS IN NORTHEASTERN WYOMING FROM PUBLIC RECORDS, STATE AGENCIES, AND PERSONAL INTERVIEWS. DATA ON WATER DEMANDS, GROUNDWATER AQUIFERS, AND COSTS OF MINELAND RECLAMATION WILL BE OBTAINED FROM SECONDARY SOURCES. PRODUCTIVITY OF RECLAIMED LAND WILL BE DETERMINED FROM SEVERAL RECLAIMED AREAS IN THE STATE. A LINEAR PROGRAMMING MODEL WILL BE USED TO ESTIMATE THE IMPACT OF COAL DEVELOPMENTS ON AGRICULTURE.

STUDY AFFILIATION

THIS IS RELATED TO 'IMPACT OF WATER AND LAND TRANSFERS ASSOCIATED WITH COAL BEVELOPMENT IN EASTERN WYOMING', ENERGY RESEARCH INFORMATION SYSTEM PROJECTS REPORT, SERIAL NO. 0000 , VOLUME 3, NO. 2, DECEMBER 1978.

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00001238

PROJECT TITLE

ELEMENT AVAILABILITY - SOILS

PROJECT NUMBER

9760-01876

INVESTIGATOR(S)

R. C. SEVERSON

RESEARCH INSTITUTION

U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV. / BOX 25046, DENVER,
FEDERAL CENTER / DENVER, CO 80225

PRIMARY SPONSOR

U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV.

PRIMARY FUNDING AMOUNT

FY 77 - 77,000

TIME FRAME

OCTOBER 1976 TO SEPTEMBER 1979

LOCATION

MT / NM / ND / SD / WY

ABSTRACT

ATTEMPTS WILL BE MADE TO IDENTIFY ONE OR MORE METHODS OF CHEMICAL SOLUTION EXTRACTION OF ELEMENTS FROM SOIL OR FRACTIONS OF SOILS OF THE NORTHERN GREAT PLAINS WHICH, ALONE OR IN COMBINATION WITH SOME PHYSICAL AND CHEMICAL SOIL PROPERTIES, MAY BE CLOSELY RELATED TO THE ELEMENT CONCENTRATES OF THE PLANTS FOUND GROWING NATURALLY UPON THEM. THE RESULTS OF THE STUDY WILL BE USED TO DIRECT A NEW PLANT AND SOIL SAMPLING EFFORT IN THE COAL-RICH SAN JUAN BASIN. THIS NEW STUDY WILL BE INITIATED THIS FISCAL YEAR.

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00001239

PROJECT TITLE

ESTABLISHMENT, COMPOSITION AND PRODUCTIVITY OF SPECIES ADAPTED TO AREAS DISTURBED BY STRIP MINING 700-15-15

PROJECT NUMBER

V625A-72 / D7-E762

INVESTIGATOR(S)

C. W. HALL / L. WIESNER

RESEARCH INSTITUTION

MONTANA STATE UNIV.

PRIMARY SPONSOR

U. S. EPA, OFFICE OF RESEARCH & DEV.

PRIMARY FUNDING AMOUNT

FY77-30,000

TIME FRAME

OCTOBER 1977 TO OCTOBER 1979

LOCATION

MT

ABSTRACT

OBJECTIVES: 1) EVALUATE THE PRODUCTIVITY AND COMPOSITION CHANGE OF NATIVE SPECIES RECENTLY ESTABLISHED ON MINE SPOILS. 2) EVALUATE NATURALIZED SPECIES TO DETERMINE THEIR ESTABLISHMENT AND PRODUCTIVITY CHARACTERISTICS. 3) CONTINUE TO DEVELOP METHODS FOR OVERCOMING SEED DORMANCY OF SPECIES WHICH SHOW PROMISE FOR USE IN RECLAIMING MINE SPOILS. 4) EVALUATE THE BUILDUP OF A DORMANT SEED POPULATION ON RECLAIMED AREAS IN COMPARISON TO THAT PRESENT IN UNDISTURBED AREAS. APPROACHES: 1) RESEARCH PLOTS WHICH WERE ESTABLISHED IN 1976 WILL BE EVALUATED FOR SPECIES COMPOSITION AND PRODUCTIVITY. 2) FIELD PLANTING WILL BE MADE TO EVALUATE ESTABLISHMENT AND PRODUCTIVITY OF INTRODUCED SPECIES WHICH ARE PRESENTLY BEING GROWN FOR FORAGE PRODUCTION NEAR STRIP MINED AREAS. 3) METHODS FOR OVERCOMING SEED DORMANCY OF PROBLEM SPECIES WILL BE DEVELOPED. DORMANT SEEDS WILL BE SUBJECTED TO SUCH TREATMENTS AS SCARIFICATION, PRESOAKING, PRECHILLING, AND VARIOUS CHEMICALS AND PLANT HORMONES. 4) SOIL CORES WILL BE TAKEN FROM 5-YEAR-OLD STANDS ESTABLISHED ON MINE SPOILS AND FROM UNDISTURBED AREAS.

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00001240

PROJECT TITLE

MINE SOIL RESOURCES IN THE POWDER RIVER BASIN - CHARACTERIZATION, EVALUATION AND POTENTIALS

PROJECT NUMBER

EPA CODE: V625A-71 / D7-E762

INVESTIGATOR(S)

G. A. NIELSEN / D. J. DOLLHOPF

RESEARCH INSTITUTION

MONTANA STATE UNIV. / BOZEMAN, MT 59715

PRIMARY SPONSOR

U.S. EPA, OFFICE OF RESEARCH & DEV. / C. W. HALL

PRIMARY FUNDING AMOUNT

FY 77 - 50,000

TIME FRAME

OCTOBER 1977 TO OCTOBER 1979

LOCATION

MT / POWDER RIVER BASIN

ABSTRACT

OBJECTIVES: 1) A SPECTRUM OF MINE SOILS FROM THE NORTHERN GREAT PLAINS COAL PROVINCE WITH VARYING CHEMICAL AND PHYSICAL PROPERTIES WILL BE IDENTIFIED AND CHARACTERIZED. 2) CRITERIA WILL BE DEVELOPED FOR EVALUATING THE POTENTIAL OF MINE SOILS FOR SELECTED LAND USES.

APPROACH: 1) SPECIAL EMPHASIS WILL BE PLACED ON CHARACTERIZING SPECIAL PROPERTIES OF MINE SOILS SUCH AS HIGH ROCK FRAGMENT CONTENT, WEATHERABILITY OF ROCK FRAGMENTS, AND STRATIFICATION OF CONTRASTING TEXTURE. METHODS WILL ALSO BE DEVELOPED AND PROPOSED FOR MAPPING MINE SOILS AND FOR DESCRIBING MAPPING UNITS OF SOILS ON MINED LAND. MINE SOIL VARIABILITY WILL ALSO BE STUDIED. 2) CRITERIA FOR EVALUTING MINE SOIL POTENTIAL WILL BE SELECTED ON THE BASIS OF EXTENSIVE REVIEW OF EXISTING LITERATURE AND ADDITIONAL RESEARCH.

PROGRESS: INITIAL FIELD WORK, SITE SELECTION, AND LITERATURE REVIEW WERE BEGUN IN THE FALL OF 1977.

00001241
PROJECT TITLE
THE IMPORTANCE AND FUNCTIONS OF ALLUVIAL VALLEY FLOORS
PROJECT NUMBER
P6238-517 / R805135-01
INVESTIGATOR(S)
J. F. MARTIN / R. A. RECHARD
RESEARCH INSTITUTION
UNIV. OF WYOMING
PRIMARY SPONSOR
U. S. EPA, OFFICE OF RESEARCH & DEV.
PRIMARY FUNDING AMOUNT
FY77-110,000
TIME FRAME
JUNE 1977 TO FEBRUARY 1980
LOCATION
WY / MT
ABSTRACT

THERE ARE BASICALLY FIVE OBJECTIVES FOR THE STUDY: (1) TO DEFINE THE MECHANISMS INVOLVED IN THE HYDROLOGY OF THE ALLUVIAL SYSTEM, (2) TO INVESTIGATE THE STRATIGRAPHIC RELATIONSHIP OF THE STREAM DEPOSITS, (3) TO IDENTIFY THE SOIL TYPES REPRESENTED, (4) TO DETERMINE REPRODUCTIVITY OF THE NATIVE PLANT COMMUNITY, AND (5) TO PROVIDE INFORMATION RELEVANT FOR STATE AND FEDERAL REGULATORY AGENCIES. IT IS INTENDED THAT THIS STUDY DELINEATE THE PROBLEMS, MINEABILITY, TREATABILITY, ETC. OF POTENTIAL ALLUVIAL VALLEY MINE SITES. THIS EFFORT IS TO DEFINE THE CRITICALLY IMPORTANT PHYSICAL FEATURES OF ALLUVIAL VALLEYS WHICH HAVE MAJOR IMPACTS TO THE HYDROLOGIC CYCLE. AFTER AN EXTENSIVE LITERATURE REVIEW, THREE SITES IN MONTANA, AND WYOMING WILL BE SELECTED FOR FIELD STUDY.

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00001242
PROJECT TITLE
ESTIMATED WATER REQUIREMENTS FOR WESTERN ENERGY DEVELOPMENT
INVESTIGATOR(S)
TUCSON MYERS
RESEARCH INSTITUTION
TUCSON MYERS & ASSOCIATES, INC. / 244 BEACH ST. /
SILVERTON, OR
PRIMARY SPONSOR
WESTERN STATES WATER COUNCIL / SUITE 200, CHANCELLOR
BUILDING / 220 SOUTH 2ND EAST / SALT LAKE CITY, UT 84111
TIME FRAME
1974 TO SEPTEMBER 1977
LOCATION
AZ / CA / CO / ID / MT / NV / NM / OR / UT / WA / WY
ABSTRACT

THIS STUDY PROJECTED STEAM-ELECTRIC PLANTS AND OTHER ENERGY PRODUCTION DEVELOPMENTS IN THE WEST TO 1990 AND PRESENTED FINDINGS IN REGARD TO THEIR ESTIMATED WATER REQUIREMENTS. INSTITUTIONAL CONSIDERATIONS AND WATER CONSERVATION OPPORTUNITIES RELATED TO WESTERN ENERGY WERE ALSO EXAMINED.

THE NEED FOR WATER FOR ENERGY DEVELOPMENT IN THE WEST WAS REVIEWED, INCLUDING ENERGY PRODUCTION PROJECTIONS, PROJECTED LOAD DEMANDS, FACILITIES AND PROCESSES (COAL SLURRY PIPELINES, COAL GASIFICATION AND LIQUEFACTION PLANTS, STEAM-ELECTRIC GENERATION PLANTS), AND STEAM-ELECTRIC COOLING WATER CONSUMPTION.

WATER USE CONSIDERATIONS IN WESTERN ENERGY DEVELOPMENT INCLUDED ECONOMIC CONSIDERATIONS IN PLANT COOLING, ALTERNATIVE WATER SUPPLIES, INSTITUTIONAL CONSIDERATIONS (STATE WATER LAW, STATE SITING PRACTICES, ENVIRONMENTAL CONSIDERATIONS), AND WATER CONSERVATION OPPORTUNITIES.

REPORTS AND PUBLICATIONS

WATER FOR WESTERN ENERGY DEVELOPMENT: UPDATE 1977. SEPTEMBER 1977. TUCSON MYERS & ASSOCIATES.
AVAILABLE FROM THE WESTERN STATES WATER COUNCIL, SUITE 200, CHANCELLOR BUILDING, 220 SOUTH 2ND EAST, SALT LAKE CITY, UT 84111

IN 1974 THE WESTERN STATES WATER COUNCIL ISSUED ITS FIRST REPORT REGARDING WATER REQUIREMENTS FOR ENERGY. THE ABOVE PUBLICATION IS AN UPDATE OF THAT REPORT.

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00001243
PROJECT TITLE
AN INTEGRATED APPROACH TO ANALYSIS OF WATER FOR ENERGY WITH SPECIAL APPLICATION TO THE YELLOWSTONE RIVER BASIN
INVESTIGATOR(S)
JOHN V. KRUTILLA / CONSTANCE BORIS
RESEARCH INSTITUTION
RESOURCES FOR THE FUTURE / 1755 MASSACHUSETTS AVE. N.W. /
WASHINGTON, D.C. 20036 (202)462-4400
PRIMARY SPONSOR
RESOURCES FOR THE FUTURE
SECONDARY SPONSOR
U.S. DEPT. OF ENERGY / U.S. DEPT. OF INTERIOR
PRIMARY FUNDING AMOUNT
NOT AVAILABLE
TIME FRAME

NOVEMBER 1975 TO 1979

LOCATION.

MT / YELLOWSTONE RIVER BASIN

ABSTRACT

THIS STUDY DEALS WITH THE QUESTION OF EVALUATING POTENTIAL WATER SUPPLIES FOR POTENTIAL ENERGY DEVELOPMENT STRATEGIES, GIVEN THE SIMULTANEOUS DEMANDS OF COMPETING USES OF WATER. SINCE THE VARIOUS USES HAVE SOME INSTITUTIONAL AND LEGAL CONSTRAINTS ASSOCIATED WITH THEIR ALLOCATION, AN EVALUATION IS BEING MADE OF THE EFFECTS OF THE INTERSTATE COMPACT ON THE YELLOWSTONE TO DETERMINE WHAT PORTION OF THE FLOW WILL BE DEPLETED (OR AGAINST WHICH RIGHTS WILL BE HELD) BY REASON OF THE INTERSTATE COMPACT, AND ALSO BY THE WIND RIVER INDIANS UNDER THE FEDERAL RESERVED RIGHTS DOCTRINE. WITHIN MONTANA THE ALLOCATION OF UNREGULATED FLOWS AGAINST WHICH THE CRITERION OF NON-INJURY MAY BE INVOKED, AND THE ALLOCATION OF THE INCREMENT TO DEPENDABLE YIELD OWING TO STORAGE REGULATION, IS DISTINGUISHED. IN THE FORMER, THE INSTITUTIONAL/LEGAL CONSTRAINTS ARE LIKELY TO BE MORE BINDING. IN THE LATTER A TIER OF MARKET MEDIATED ALLOCATIONS IS MORE PROBABLE, SO THAT A TWO TIER ALLOCATION SYSTEM MAY DEVELOP. HOW THE ALLOCATIONS WILL OCCUR WILL DEPEND ON PENDING DECISIONS BEFORE THE COURTS AND THE EVALUATION OF RIVAL RESERVATIONS BY THE MONTANA DEPT. OF NATURAL RESOURCES AND CONSERVATION. THE RFF/YELLOWSTONE RIVER BASIN PLANNING MODEL IS DESIGNED TO PLAY OUT THE IMPLICATIONS FOR WATER AVAILABLE FOR ENERGY (OR ANY OTHER BENEFICIAL USE) OF DIFFERENT OUTCOMES IN REACHING DETERMINATIONS ON WATER RIGHTS AND RESERVATIONS WHETHER THROUGH THE LEGAL OR ADMINISTRATIVE PROCESS SET UP BY STATE AND FEDERAL LAW.

REPORTS AND PUBLICATIONS

A 300+ MANUSCRIPT IS BEING PREPARED ENTITLED "AN INTEGRATED APPROACH TO ANALYSIS OF WATER FOR ENERGY."
A DRAFT MANUSCRIPT WILL BE AVAILABLE JAN. 30, 1979.

00001244

PROJECT TITLE

ROLE OF WINDBLOWN DUST IN NEUTRALIZING ATMOSPHERIC PRECIPITATION

PROJECT NUMBER

0790-5503 / EE-77-S-02-4327

INVESTIGATOR(S)

E. GORHAM

RESEARCH INSTITUTION

UNIV. OF MINNESOTA, DEPT. OF ECOLOGY & BEHAVIORAL BIOLOGY /
ST. PAUL, MN 55455 / (612) 376-1743

PRIMARY SPONSOR

U.S. DEPT. OF ENERGY / WASHINGTON, D.C. 20545

PRIMARY FUNDING AMOUNT

FY 77 - 17,100 / FY 78 - 34,100

TIME FRAME

OCTOBER 1976 TO DECEMBER 1978

LOCATION

ND / MN

ABSTRACT

THE CHEMICAL COMPOSITION OF WET AND DRY FALLOUT WILL BE INVESTIGATED AT THREE SITES, ONE IN THE PRAIRIE OF NORTH DAKOTA OR N.W. MINNESOTA, ONE JUST INSIDE THE FOREST BORDER AT ITASCA STATE PARK IN N.W. MINNESOTA, AND ONE IN MIXED CONIFER/HARDWOOD FOREST IN N.E. MINNESOTA. THE AIMS OF THE STUDY ARE (1) TO PROVIDE PRESENT-DAY INFORMATION AGAINST WHICH TO ASSESS NEW POLLUTION INPUTS LIKELY TO OCCUR IN THE NEAR FUTURE, AND (2) TO ELUCIDATE, BY SAMPLING INDIVIDUAL PRECIPITATIONS, THE ENVIRONMENTAL FACTORS OF

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00001245

PROJECT TITLE

LONG-TERM EFFECTS OF TRACE ELEMENT EMISSIONS FROM ENERGY CONVERSION FACILITIES

PROJECT NUMBER

10773210

INVESTIGATOR(S)

GENE A. CHRISTIANSON

RESEARCH INSTITUTION

NORTH DAKOTA DEPT. OF HEALTH, DIV. OF ENV. ENG.
STATE CAPITOL BLDG., / BISMARCK, ND 58505

PRIMARY SPONSOR

OLD WEST REGIONAL COMMISSION / DR. KENNETH A . BLACKBURN /
228 HEDDEN-EMPIRE BLDG. / BILLINGS, MT 59101

PRIMARY FUNDING AMOUNT

251,180

TIME FRAME

JULY 1977 TO JUNE 1979

LOCATION

ND

ABSTRACT

THIS PROJECT IS A CONTINUATION OF 'TRACE ELEMENT EFFECTS OF ENERGY CONVERSION FACILITIES' (ERIS 00000145), WHICH HAS CONTRIBUTED A CONSIDERABLE BODY OF KNOWLEDGE TOWARD THE RESOLUTION OF MANY CONCERNS DEALING WITH THE ENVIRONMENTAL EFFECTS OF TRACE ELEMENT EMISSIONS. HOWEVER, THIS STUDY HAS NOT ANSWERED MANY QUESTIONS CONCERNING THE EFFECT OF LOW-LEVEL, LONG-TERM EMISSION OR RELEASE OF TRACE ELEMENTS INTO THE ENVIRONMENT. THE STUDY WAS OF NECESSITY LIMITED TO THE EMISSION OF TRACE ELEMENTS INTO THE ENVIRONMENT. OTHER ENVIRONMENTAL CONSIDERATIONS, PARTICULARLY IN THE AREAS OF SURFACE AND GROUNDWATER AS WELL AS SOLID WASTE DISPOSAL QUESTIONS WERE NOT PROVIDED FOR BY THE INITIAL CONTRACT. FURTHER, IN THE EVALUATION OF LONG-TERM EFFECTS, ALL ENVIRONMENTAL ASPECTS MUST BE EVALUATED FOR EFFECTIVE CONTROL OF TRACE ELEMENTS. THE OBJECTIVES OF THIS PROJECT ARE AS FOLLOWS: 1. THE EVALUATION OF AIR/SOIL AND AIR/SURFACE WATER TRACE ELEMENT TRANSFER FACTORS; 2. EVALUATION OF DISPOSAL METHODOLOGIES OF FACILITY COLLECTED LIQUID AND/OR SOIL WASTE; 3. EVALUATION OF LONG-TERM WASTE STORAGE AND CONTAMINANT TRACE ELEMENT QUESTIONS INCLUDING GROUNDWATER CONTAMINATION AND POTENTIAL RESUSPENSION TO THE AIR AND WATER ENVIRONMENTS OF FACILITY DRY SOLID WASTE MATERIALS; AND 4. THE ESTABLISHMENT OF A FOUNDATION FOR DEVELOPMENT OF APPROPRIATE REGULATORY CONTROLS FOR PREVENTING TRACE ELEMENT ENVIRONMENTAL EFFECTS.

STUDY AFFILIATION

THIS PROJECT IS RELATED TO 'TRACE ELEMENT EFFECTS OF ENERGY CONVERSION FACILITIES.' PROJECT NUMBER 00000145, ENERGY RESEARCH INFORMATION SYSTEM QUARTERLY REPORT, VOLUME 1, NO. 1, NOVEMBER 1975.

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00001246

PROJECT TITLE

USE OF LICHENS AS PREDICTORS AND INDICATORS OF AIR POLLUTION FROM A COAL-FIRED POWER PLANT

PROJECT NUMBER

EPA CODE: M625A-020 / R80537-01 (GRANT)

INVESTIGATOR(S)

SHARON EVERSMAN

RESEARCH INSTITUTION

MONTANA STATE UNIV. / BOZEMAN, MT 59715

PRIMARY SPONSOR

U.S. EPA, OFFICE OF RESEARCH & DEV. / ERIC PRESTON

PRIMARY FUNDING AMOUNT
FY 77 - 13,604

TIME FRAME
SEPTEMBER 1977 TO AUGUST 1980

LOCATION
MT / COLSTRIP

ABSTRACT

TWO LICHEN SPECIES NATIVE TO SOUTHEAST MONTANA SHOWED REDUCED RESPIRATION RATES AND ALGAL CELL PLASMOLYSIS AND BLEACHING WHEN EXPOSED TO .02, .04, AND .07 PPM SO2 (GEOMETRIC MEANS) ON A FIELD FUMIGATION SITE. THE MAJOR OBJECTIVE OF THE CURRENT PROJECT IS TO COLLECT THESE SAME TWO LICHEN SPECIES TO BE OBSERVED AS BIOLOGICAL MONITORS OF SO2 EMISSIONS FROM TWO COAL-FIRED POWER PLANTS IN COLSTRIP, MONTANA. LICHEN COMMUNITY INFORMATION IS ALSO BEING COLLECTED IN ORDER TO DETECT ANY CHANGES IN EPIPHYTIC AND SOIL LICHEN COMMUNITIES AS COAL BURNING PROCEEDS IN THIS AREA. ALL THE LICHEN INFORMATION WILL BE INTEGRATED WITH PLANT COMMUNITY DATA GATHERED BY OTHER RESEARCHERS IN THE AREA IN ORDER TO DETERMINE EFFECTS OF SO2 EMISSIONS (AND OTHER COAL-BURNING POLLUTANTS) ON PONDEROSA PINE-GRASSLAND ECOSYSTEMS.

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00001247

PROJECT TITLE
MONITORING PLANT COMMUNITY CHANGES DUE TO FOSSIL FUEL POWER PLANTS IN SOUTHEASTERN MONTANA

PROJECT NUMBER
EPA CODE: M62SA-023 / RR05391 (GRANT)

INVESTIGATOR(S)
J. E. TAYLOR

RESEARCH INSTITUTION
MONTANA STATE UNIV. / BOZEMAN, MT 59715

PRIMARY SPONSOR
U.S. EPA, OFFICE OF RESEARCH & DEV. / ERIC PRESTON

PRIMARY FUNDING AMOUNT
FY 77 - 52,766

LOCATION
MT

ABSTRACT

OBJECTIVES: A. TO CONTINUE TO MONITOR AIR POLLUTION EFFECTS UPON NATIVE GRASSLAND VEGETATION IN AREAS AFFECTED BY FOSSIL FUEL POWER PLANTS AND ON AREAS ARTIFICIALLY STRESSED WITH AIR POLLUTANTS: B. TO SUPPLY BASELINE INVENTORY INFORMATION, INCLUDING AERIAL PHOTOGRAPHY AND ITS INTERPRETATION, TO A VARIETY OF SCIENTISTS, LAND USERS AND MANAGERS IN EASTERN MONTANA: C. TO PROVIDE RIGOROUS DATA FOR SIMULATION MODELS WHICH CAN BE USED TO PREDICT BIOENVIRONMENTAL CHANGES DUE TO FOSSIL FUEL POWER GENERATION IN OTHER AREAS.

APPROACHES: AERIAL AND GROUND PHOTOGRAPHY, SPECIES DIVERSITY (NUMBER AND COVER), AND PHENOLOGY WILL BE REALTED TO POLLUTION STRESSES AND 'NORMAL' VARIATION IN COMMUNITY STRUCTURE. PLANS: TWO YEARS' ADDITIONAL FIELD OBSERVATIONS WILL BE INCORPORATED INTO THE COAL-FIRED POWER PLANT PROTOCOL AND A VEGETATIONAL MONITORING SYSTEM.

STUDY AFFILIATION
THIS PROJECT IS RELATED TO 'MONITORING PLANT COMMUNITY CHANGES DUE TO FOSSIL FUEL POWER PLANTS IN EASTERN MONTANA.' PROJECT NUMBER 00000170, ENERGY RESEARCH INFORMATION SYSTEM QUARTERLY REPORT, VOLUME 1, NO. 1, NOVEMBER 1975.

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00001248

PROJECT TITLE
CIRCLE WEST WILDLIFE BASELINE STUDY

INVESTIGATOR(S)
LARRY S. THOMPSON (DNRC)
MONTANA DEPT. OF FISH AND GAME / THOMAS DAHMER / RICHARD DOUGLAS / RENEWABLE RESOURCES CONSULTING SERVICES, LTD.

RESEARCH INSTITUTION
MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION / 32 S. EWING / HELENA, MT (406)449-3780

PRIMARY SPONSOR
MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION

PRIMARY FUNDING AMOUNT
54,090 (FROM DREYER BROTHERS, INC.)

TIME FRAME
JULY 1976 TO OCTOBER 1978

LOCATION
MT / MCCONE CO. / NEAR THE FORT PECK RESERVOIR OF THE MISSOURI RIVER

ABSTRACT

IN 1974, DREYER BROTHERS, INC., A WHOLLY-OWNED SUBSIDIARY OF BURLINGTON NORTHERN, INC. NOTIFIED THE STATE THAT IT PROPOSED TO DEVELOP A COAL PROCESSING FACILITY IN MCCONE COUNTY, MONTANA. THE CIRCLE WEST PROJECT WOULD INCLUDE MANUFACTURE OF AMMONIA, METHANOL-METHYL FUEL, SYNTHETIC DIESEL FUEL OIL, THE DEVELOPMENT OF MINING OPERATIONS TO PROVIDE THE LIGNITE REQUIREMENTS, DEVELOPMENT OF AN IRRIGATION SYSTEM, THE CONSTRUCTION OF A WATER SUPPLY SYSTEM, THE CONSTRUCTION OF TRANSPORTATION AND ACCESS AND UTILITY FACILITIES, AND THE CONSTRUCTION OF A TOWNSITE TO MEET THE HOUSING NEEDS OF THE CONSTRUCTION WORK FORCE. THE OVERALL OBJECTIVES OF THE CIRCLE WEST WILDLIFE BASELINE STUDY WERE TO: 1) DESCRIBE THE WILDLIFE RESOURCE AS IT EXISTS IN AND AROUND THE PROJECT AREA PRIOR TO MINING, WITH SPECIAL EMPHASIS ON CERTAIN "KEY" SPECIES: 2) DETERMINE THE DISTRIBUTION AND QUALITY OF HABITATS AND THEIR RELATION TO TERRESTRIAL VERTEBRATE COMMUNITIES OVER A TWELVE-MONTH PERIOD: 3) OBTAIN DETAILED BASELINE INFORMATION ON CERTAIN PARAMETERS DESCRIBING THE ECOLOGY OF SPECIES OR

COMMUNITIES WHICH ARE MOST LIKELY TO CHANGE MEASURABLY AS A RESULT OF THE PROPOSED FACILITY OR ARE OF RELATIVELY GREATEST CONCERN FOR USE IN PREDICTING AND MONITORING IMPACTS; AND 4) ESTABLISH A PROGRAM FOR LONG-TERM MONITORING OF THESE PARAMETERS IN ORDER TO DOCUMENT SHORT-TERM AND LONG-TERM IMPACTS WHICH MAY RESULT FROM THE PROPOSED FACILITY.

REPORTS AND PUBLICATIONS

CIRCLE WEST WILDLIFE BASELINE STUDY, FINAL REPORT. PRINCIPAL INVESTIGATOR: LARRY S. THOMPSON, BIOLOGICAL SERVICES COORDINATOR, MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION. CIRCLE WEST TECHNICAL REPORT NO. 2. OCTOBER 1978.

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00001249

PROJECT TITLE

CIRCLE WEST VEGETATION BASELINE STUDY

INVESTIGATOR(S)

RICHARD PRODGERS

RESEARCH INSTITUTION

MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION
32 S. EWING / HELENA, MT 59601 (406)449-3780

PRIMARY SPONSOR

MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION

PRIMARY FUNDING AMOUNT

28,436 (FROM DREYER BROTHERS, INC.)

TIME FRAME

JULY 1976 TO OCTOBER 1978

LOCATION

MT / MCCONE CO. / NEAR FORT PECK RESERVOIR OF THE MISSOURI RIVER

ABSTRACT

IN 1974, DREYER BROTHERS, INC., A WHOLLY-OWNED SUBSIDIARY OF BURLINGTON NORTHERN, INC., NOTIFIED THE STATE THAT IT PROPOSED TO DEVELOP A COAL PROCESSING FACILITY IN MCCONE COUNTY, MONTANA. THE CIRCLE WEST PROJECT WOULD INCLUDE MANUFACTURE OF AMMONIA, METHANOL-METHYL FUEL, SYNTHETIC DIESEL FUEL OIL, THE DEVELOPMENT OF MINING IRRIGATION SYSTEM, THE CONSTRUCTION OF A WATER SUPPLY SYSTEM, THE CONSTRUCTION OF A TOWNSITE TO MEET THE HOUSING NEEDS OF THE CONSTRUCTION WORK FORCE.

THE CIRCLE WEST VEGETATIVE BASELINE STUDY WAS DESIGNED TO COLLECT SUFFICIENT INFORMATION DESCRIBING THE VEGETATION OF THE STUDY AREA SO THAT CHANGES IN VEGETATION CAN BE DETECTED, AND FURTHER BASELINE AND MONITORING STUDIES CAN BE EXPEDITIOUSLY CARRIED OUT. THIS INFORMATION WHICH WILL EVENTUALLY BE USED TO EVALUATE THE IMPACTS OF THE PROPOSED DEVELOPMENT, WAS DERIVED BY DATA COLLECTED BY: 1) CHARACTERIZING THE VEGETATION OF THE AREA IN A MANNER THAT SERVES THE MAXIMUM NUMBER OF NEEDS AND MOST CONCISELY CONVEYS INFORMATION ABOUT THE VEGETATION OF ANY PORTION OF THE STUDY AREA; 2) CHARACTERIZING THE AVERAGE SITES ASSOCIATED WITH THE VARIOUS COMMUNITY TYPES; 3) COMPARING THE COMMUNITY TYPES WITH RESPECT TO SPECIES DIVERSITY; 4) MAPPING THE VEGETATION OF THE STUDY AREA AND THE RANGE CONDITION OF THE PROPOSED MINE AREA; 5) DETERMINING THE PRODUCTIVITY OF THE MAJOR COMMUNITY TYPES OF THE PROPOSED MINE AREA; AND 6) LISTING ALL PLANT SPECIES FOUND IN THE STUDY AREA AND IDENTIFYING ANY RARE OR ENDANGERED PLANTS.

STUDY AFFILIATION

THIS PROJECT IS AN UMBRELLA PROJECT COVERING "CIRCLE WEST VEGETATION INVENTORY." PROJECT NUMBER 0000924, ENERGY RESEARCH INFORMATION SYSTEM PROJECTS REPORT, VOLUME 2, NO. 3, NOVEMBER 1977.

REPORTS AND PUBLICATIONS

CIRCLE WEST VEGETATION BASELINE STUDY -- FINAL REPORT. MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION, TECHNICAL REPORT NO. 1, OCTOBER 1978.

00001250
PROJECT TITLE
ENERGY RESOURCES AND ENVIRONMENT STUDIES TRAINING PROGRAM SALISH-KOOTENAI AND BLACKFEET TRIBES
PROJECT NUMBER
10871197
INVESTIGATOR(S)
DR. ROY E. CAMERON
RESEARCH INSTITUTION
U.S. DEPT. OF ENERGY, ARGONNE NATIONAL LAB.
9700 S. CASS AVE. / ARGONNE, IL 60439
PRIMARY SPONSOR
OLD WEST REGIONAL COMMISSION / DR. KENNETH A. BLACKBURN / 228 HEDDEN-EMPIRE BLDG. / BILLINGS, MT 59101
U.S. DEPT. OF ENERGY, ARGONNE NATIONAL LAB.
PRIMARY FUNDING AMOUNT
36,173
SECONDARY FUNDING AMOUNT(S)
46,388
TIME FRAME
APRIL 1978 TO SEPTEMBER 1978
LOCATION
MT
ABSTRACT

THE PROGRAM FOR THE SALISH-KOOTENAI AND BLACKFEET TRIBES WILL ATTEMPT TO MEET THE OVERALL NEEDS AND CONCERNS OF INDIAN PEOPLE REGARDING ENERGY DEVELOPMENT ON THEIR LANDS, THE IMPACTS OF ENERGY DEVELOPMENT, THE IMPLICATIONS OF ENERGY EXTRACTION AND DEVELOPMENT - COAL, OIL AND NATURAL GAS, HYDROELECTRIC POWER - THE USES OF RESOURCES ASSOCIATED WITH ENERGY RESOURCES (ESPECIALLY WATER AND WATER RIGHTS), AND RECLAMATION AND RECOVERY OF DISTURBED LAND, AIR, AND WATER.

THE SPECIFIC OBJECTIVES OF THIS PROJECT ARE TO: 1) DEVELOP AN EDUCATIONAL AND TRAINING PROGRAM TO MEET TRIBAL AND INDIVIDUAL NEEDS; 2) PROVIDE INSTRUCTION, TRAINING, AND FACILITIES TO MEET THE ABOVE NEEDS; 3) MODIFY, ENLARGE AND/OR CONTINUE TO PROVIDE FUTURE INSTRUCTION AND TRAINING TO MEET CHANGING TRIBAL NEEDS AS REQUIRED.

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00001251
PROJECT TITLE
ECONOMIC RESEARCH OF THE TAXATION OF MINERAL FUELS IN THE OLD WEST REGION
PROJECT NUMBER
10871232
INVESTIGATOR(S)
RUDYARD GOODE
RESEARCH INSTITUTION
UNIV. OF MONTANA / MISSOULA, MT 59812
PRIMARY SPONSOR
OLD WEST REGIONAL COMMISSION / THOMAS F. KIELY / 228 HEDDEN-EMPIRE BLDG. / BILLINGS, MT 59101
PRIMARY FUNDING AMOUNT
68,469
TIME FRAME
SEPTEMBER 1978 TO JUNE 1979
LOCATION
MT / NE / ND / SD / WY
ABSTRACT

HISTORICALLY, THE SEVERAL STATES HAVE IMPOSED TAXES UPON MINERALS BEING SEVERED OR EXTRACTED FROM THE EARTH FOR ULTIMATE UTILIZATION BY THE INDIVIDUAL AND INDUSTRY. SINCE THE MINERAL RESOURCE IS NON-RENEWABLE THE STATES HAVE IMPOSED THE TAX WHEN EXTRACTED RATHER THAN WHILE FIXED AND IN PLACE. THE IMPACT OF THE ENERGY CRISIS HAS STIMULATED THE SEARCH AND RESEARCH FOR THE TRADITIONAL AND ALTERNATE SOURCES OF ENERGY. THE FIVE STATES OF THE OLD WEST REGION ARE MAJOR PRODUCERS AS WELL AS CONSUMERS OF MINERAL FUELS AND HAVE A COMMON INTEREST IN THE ECONOMIC EFFECTS OF SUCH TAXATION.

THIS RESEARCH WILL ENDEAVOR TO PROVIDE A COMPACT, OVERALL VIEW OF THE IMPACTS OF THE TAXATION OF MINERAL FUELS IN THE STATES WHICH COMPRISE THE OLD WEST REGION. PRIMARY EMPHASIS SHALL BE ON COAL AND URANIUM WITH PETROLEUM AND NATURAL GAS ALSO INCLUDED. THE OBJECTIVES ARE: 1) TO PROVIDE AN HISTORIC BACKGROUND OF THE TAXATION OF MINERAL FUELS AND DESCRIBE THE PRESENT LEVEL OF TAXATION AND ALLOCATION THEREOF IN EACH STATE. ATTENTION WILL BE GIVEN TO THE IMPORTANCE OF MINERAL FUELS TAXATION AS A SOURCE OF REVENUE IN EACH STATE. 2) TO FOCUS ON THE TOTAL FISCAL IMPACT OF COAL DEVELOPMENT, TO FURTHER DELINEATE PRODUCTION COSTS, TRANSPORTATION CHARGES, PROFITS AND TAXES GENERATED BY COAL DEVELOPMENT; 3) TO DEFINE THE ROLE OF THE OLD WEST REGION AS A SUPPLIER OF COAL FOR ELECTRICAL GENERATION OVER THE NEXT DECADE. ALTERNATIVE AND COMPETITIVE SOURCES AND THE MARKET OUTLOOK FOR EACH STATE WILL BE ANALYZED AND DISCUSSED.

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00001252
PROJECT TITLE
CHEYENNE RIVER SIOUX TRIBE PROJECT
PROJECT NUMBER
10770069

RESEARCH INSTITUTION

CHEYENNE RIVER SIOUX TRIBE / SOUTH DAKOTA

PRIMARY SPONSOR

OLD WEST REGIONAL COMMISSION / ROBERT P. OEHERSSEMAN /
201 MAIN ST., SUITE D / RAPID CITY, SD 57701

PRIMARY FUNDING AMOUNT

PHASE I - 28.000 / PHASE II - 12.000

TIME FRAME

DECEMBER 1976 TO MARCH 1979

STATUS

PHASE I HAS BEEN COMPLETED. PHASE II IS ONGOING.

LOCATION

SD

ABSTRACT

THE PURPOSE OF THIS PROJECT IS TO ASSIST IN PLANNING AND ADMINISTERING ENERGY DEVELOPMENT STRATEGIES. THE PROPOSAL SEEKS TO FURNISH THE TRIBE WITH ADEQUATE BUSINESS MANAGEMENT SERVICES IN PLANNING AND ADMINISTERING STRATEGIES RELATING TO DEVELOPMENT OF EXTENSIVE MINERAL RESOURCES WITHIN TRIBAL BOUNDARIES.

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00001253

PROJECT TITLE

ASSESSMENT OF PUBLIC REVENUES AND EXPENDITURES ATTRIBUTABLE TO THE COAL INDUSTRY IN WYOMING

INVESTIGATOR(S)

JOHN A. RAINES / ALLEN VANDERMEULEN, JR. / KENYON N. GRIFFIN

RESEARCH INSTITUTION

UNIV. OF WYOMING, INSTITUTE FOR POLICY RESEARCH / P.O. BOX
3925 / LARAMIE , WY 82071 / (307) 766-4319

PRIMARY SPONSOR

WESTERN FUELS ASSOCIATION, INC. / LLOYD A. ERNST /
1810 CAPITOL AVE. / CHEYENNE, WY 82001 / (307) 634-7955

PRIMARY FUNDING AMOUNT

39.000

TIME FRAME

DECEMBER 1976 TO MARCH 1978

STATUS

COMPLETED MARCH 1978

LOCATION

WY

ABSTRACT

THIS STUDY EXAMINES EXPENDITURES BY WYOMING STATE AND LOCAL GOVERNMENTS AND REVENUES AVAILABLE TO FINANCE PUBLIC SERVICES OVER THE PERIOD FROM 1972 THROUGH 1985. INCREASES IN POPULATION RESULTING FROM ALL ASPECTS OF ANTICIPATED DEVELOPMENT MEAN PRESSURES FOR INCREASED EXPENDITURES, WHILE REVENUES GROW AS A RESULT OF AN EXPANDED TAX BASE. THE PRIMARY OBJECTIVE OF THE PROJECT WAS TO DETERMINE THE RELATIONSHIP OF COAL-RELATED CHANGES IN EXPENDITURE PRESSURES AND REVENUES TO THE TOTAL CHANGES ANTICIPATED BY 1985. EXPENDITURE PRESSURES AND REVENUES WERE STUDIED FOR FOUR GOVERNMENTAL GROUPINGS. THESE ARE (1) ALL LOCAL AND STATE GOVERNMENTS TAKEN TOGETHER; (2) STATE GOVERNMENT ALONE; (3) ALL LOCAL GOVERNMENTS IN THE STATE TAKEN COLLECTIVELY; AND (4) THE SUM OF ALL LOCAL GOVERNMENTS LOCATED IN A COUNTY AREA. SATISFACTION WITH PUBLIC SERVICES AND PREFERENCES FOR FINANCING DESIRED CHANGES WERE INVESTIGATED TO ASSURE THAT ADJUSTMENTS TO HISTORICAL EXPENDITURE AND REVENUE PATTERNS WERE WITHIN THE RANGE DESIRED BY WYOMING RESIDENTS. THE ANALYSIS IS PRESENTED IN BALANCE SHEET FORMAT COMPARING EXPENDITURE PRESSURES AND REVENUES. WHEN PROJECTED EXPENDITURES ARE GREATER THAN ESTIMATED REVENUES, THE DIFFERENCE IS INTERPRETED AS A MEASURE OF PRESSURE FOR GOVERNMENTAL ACTION.

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00001254

PROJECT TITLE

ECONOMIC AND FISCAL IMPACTS OF COAL DEVELOPMENT: NORTHERN GREAT PLAINS

INVESTIGATOR(S)

JOHN V. KRUTILLA / ANTHONY FISHER / RICHARD PRICE

RESEARCH INSTITUTION

RESOURCES FOR THE FUTURE / 1755 MASS. AVENUE,NW. /
WASHINGTON, D. C. 20036 / (202)462-4400

PRIMARY SPONSOR

FORD FOUNDATION / 320 E. 43RD ST. / N.Y., N.Y. 100017

SECONDARY SPONSOR

MONTANA STATE GOVERNMENT

TIME FRAME

FEBRUARY 1975 TO MAY 1978

STATUS

COMPLETED MAY 1978

LOCATION

MT / EASTERN MONTANA / ROSEBUD CO. / BIGHORN CO.

ABSTRACT

THE OBJECTIVE IS TO SET QUANTITATIVE BOUNDARIES ON THE IMPACT ON STATE AND LOCAL ECONOMIES AND GOVERNMENTS OF DIFFERENT COAL DEVELOPMENT POLICIES THAT MIGHT BE PURSUED IN EASTERN MONTANA TO DETERMINE WHETHER THERE WOULD BE FISCAL CONSTRAINTS ENCOUNTERED IN DEVELOPMENT OF DIFFERENT RATES, LEVELS AND CHARACTERISTICS. A COMPANION STUDY TO EVALUATE THE PROSPECTS OF WATER QUALITY AND/OR QUANTITY CONSTRAINTS IS CURRENTLY UNDERWAY.

REPORTS AND PUBLICATIONS

ECONOMIC AND FISCAL IMPACTS OF COAL DEVELOPMENT: NORTHERN GREAT PLAINS. RESOURCES FOR THE FUTURE. OR JOHNS HOPKINS PRESS ($16.00)

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00001255
PROJECT TITLE
INDIAN LANDS STUDY
INVESTIGATOR(S)
ED GABRIEL / SHELDON COUSIN
RESEARCH INSTITUTION
COUNCIL OF ENERGY RESOURCE TRIBES (CERT) / 1000 CONN. AVE.NW.
SUITE 510 / WASHINGTON. D.C. 20036 / (202)466-7702
PRIMARY SPONSOR
U.S. DEPT. OF INTERIOR. OFFICE OF SURFACE MINING
PRIMARY FUNDING AMOUNT
700.000
TIME FRAME
SEPTEMBER 1978 TO JULY 1979
LOCATION
AZ / NAVAJO & HOPI RESERVATIONS / MT / CROW & NO. CHEYENNE
RESERVATIONS / ND / FT. BERTHOLD / CO / SO. UTE RESERVATION /
UINTA
ABSTRACT

THE COUNCIL OF ENERGY RESOURCE TRIBES STUDY. CONTRACTED BY THE OFFICE OF SURFACE MINING UNDER SECTION 710 OF THE SURFACE MINING CONTROL AND RECLAMATION ACT OF 1977. HAS SEVERAL MAJOR OBJECTIVES. THESE ARE: (1) ENABLING THE AFFECTED TRIBES TO EVALUATE THEIR FUNCIONAL CAPABILITIES TO ASSURE REGULATORY AUTHORITY OVER SURFACE MINING OF THEIR LANDS; (2) PROVIDING BACKGROUND INFORMATION. ANALYSIS AND EVALUATION OF TRIBES' ORGANIZATIONS AND STRUCTURES; AND (3) DEVELOPING REGULATORY PROGRAM MODELS CONSISTANT WITH BOTH TRIBAL CAPABILITIES AND THE GOALS AND OBJECTIVES OF THE 1977 FEDERAL ACT. THE CERT STUDY WILL BE INCORPORATED INTO A BROADER STUDY BEING UNDERTAKEN BY THE INTERIOR DEPARTMENT TO EXAMINE THE QUESTION OF REGULATION OF SURFACE MINING ON INDIAN LANDS IN COMPLIANCE WITH THE NEW FEDERAL LAW WHICH RECOGNIZES THE SPECIAL JURISDICTIONAL STATUS OF THESE INDIAN LANDS.

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00001256
PROJECT TITLE
SUPPORT TO NORTH DAKOTA STATE FOR SOCIOECONOMIC MODEL
PROJECT NUMBER
EF-G-01-2720
INVESTIGATOR(S)
L. LEISTRITZ
RESEARCH INSTITUTION
NORTH DAKOTA REGIONAL ENVIRONMENTAL ASSESSMENT PROGRAM /
BISMARCK. ND 58505 / (701) 224-3700
PRIMARY SPONSOR
U.S. DEPT. OF ENERGY / WASHINGTON. D.C.
SECONDARY SPONSOR
NORTH DAKOTA REGIONAL ENVIRONMENTAL ASSESSMENT PROGRAM
PRIMARY FUNDING AMOUNT
200.000
TIME FRAME
AUGUST 1977 TO SEPTEMBER 1978
LOCATION
ND
ABSTRACT

TRANSFERABILITY OF A SYSTEM FOR ASSESSING THE ENVIRONMENTAL. ECONOMIC AND SOCIOLOGIC IMPACTS OF THE DEVELOPMENT OF COAL RESOURCES IN NORTH DAKOTA.
THE POSSIBILITIES OF ITS USEFULNESS
TO OTHER REGIONS AND STATES WILL BE EXPLORED. OTHER COMPONENTS INCLUDE REFINEMENTS OF THE MODEL AND A SURVEY OF ITS USEFULNESS IN THE DECISION MAKING PROCESS. THE PRODUCTS OF THIS EFFORT ARE: (A) A SERIES OF CONFERENCES WITH 5 STATES TO BE PRECEDED WITH BRIEFING MATERIALS AND FOLLOWED BY AN EVALUATION; (B) REPORT ON CLIENTS AND USAGE OF REAP MODEL; (C) EXPLANATION OF MODEL REFINEMENTS AND FULL DOCUMENTATION; (D) DOE ACCESS TO THE RESOURCE REFERENCE SYSTEM.

STUDY AFFILIATION
THIS PROJECT IS RELATED TO 'DEVELOPMENT OF ECONOMIC/DEMOGRAPHIC MODEL.' PROJECT NUMBER 00000631. ENERGY RESEARCH INFORMATION SYSTEM PROJECTS REPORT. VOLUME 2. NO. 1. JANUARY 1977.

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00001257
PROJECT TITLE
WESTERN COAL PLANNING ASSISTANCE PROJECT
INVESTIGATOR(S)
ARTHUR H. GREENBERG
RESEARCH INSTITUTION
WESTERN COAL PLANNING ASSISTANCE PROJECT / HEDDEN EMPIRE
BUILDING. SUITE 212 / 208 N. 29TH ST. / BILLINGS. MT 59101
COOPERATOR
MOUNTAIN WEST RESEARCH. INC. / BILLINGS. MT / ABT. INC. /
ENGLEWOOD. CO
PRIMARY SPONSOR
U.S. GEOLOGICAL SURVEY. RESOURCE & LAND INVESTIGATIONS
(THROUGH THE MISSOURI RIVER BASIN COMMISSION)
PRIMARY FUNDING AMOUNT
250.000
TIME FRAME
SEPTEMBER 1977 TO SEPTEMBER 1978

LOCATION

MT / ND / WY

ABSTRACT

THE PURPOSE OF THE WESTERN COAL PLANNING ASSISTANCE PROJECT (WCPAP) IS DESIGNED TO HELP STATES AND LOCAL CITIZENS DEVELOP THE TECHNICAL METHODS AND INFORMATION NEEDED TO COPE WITH THE PROBLEMS ASSOCIATED WITH COAL/ENERGY DEVELOPMENT. THE PROJECT CONSISTS OF TWO MAJOR TASKS: (1) THE DEVELOPMENT OF A REFERENCE SYSTEM FOR PLANNERS AND DECISION-MAKERS, AND (2) A DETAILED ASSESSMENT OF PLANNING PROBLEMS AND NEEDS IN THE THREE STATES (MT, ND, WY). THE TASKS WILL BE PERFORMED SIMULTANEOUSLY. DURING THE PERIOD THE REFERENCE DOCUMENTS ARE BEING PREPARED, THE STAFF OF WCPAP WILL INTERVIEW LOCAL, STATE, FEDERAL AND PRIVATE SECTOR PLANNERS AND LOCAL AND STATE DECISION-MAKERS TO DETERMINE THEIR VIEWS OF PROBLEMS AND NEEDS IN PLANNING FOR COAL AND RELATED DEVELOPMENT OR NON-DEVELOPMENT. PROBLEMS AND NEEDS IDENTIFIED MAY INCLUDE DATA AVAILABILITY, INFORMATION SYSTEMS, TECHNICAL ASSISTANCE, ANALYTICAL TOOLS, PROFESSIONAL TRAINING, FUNDING, AND INTERSTATE PLANNING COORDINATION. THE STAFF WILL ANALYZE THE RELATIVE IMPORTANCE OF THE IDENTIFIED PLANNING PROBLEMS AND NEEDS AND PRESENT THEIR CONCLUSIONS TO A WORKSHOP FOR PLANNERS AND DECISIONMAKERS IN SEPTEMBER 1978. (MEO)

STUDY AFFILIATION

THIS PROJECT IS THE UMBRELLA PROJECT COVERING ERIS PROJECT NUMBERS 00001096, 00001097, AND 00001110. ENERGY RESEARCH INFORMATION SYSTEM PROJECTS REPORT, VOLUME 3, NO. 1, AUGUST 1978.

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00001258

PROJECT TITLE

TO OBTAIN LABOR MARKET INFORMATION FOR EXPANDING ENERGY PRODUCTION IN THE ROCKY MOUNTAIN-NORTHERN GREAT PLAINS REGION

PROJECT NUMBER

2720

INVESTIGATOR(S)

G. MANGUM / J. BAKER

RESEARCH INSTITUTION

UTAH UNIV., HUMAN RESOURCES INST. / SALT LAKE CITY, UT/
(801) 581-6127

COOPERATOR

REGION VIII EMPLOYMENT AND TRAINING ADMIN./ DR. WILLIS NORDLUND / 1961 STOUT ST. / DENVER, CO 80202 / (303) 837-5732

PRIMARY SPONSOR

UTAH DEPT. OF EMPLOYMENT SECURITY / SALT LAKE CITY, UT

PRIMARY FUNDING AMOUNT

50,000

TIME FRAME

DECEMBER 1975 TO JUNE 1977

LOCATION

MT / ND / WY / UT / CO / NM

ABSTRACT

AS A RESULT OF RECENT CHANGES IN SUPPLY SOURCES OF ENERGY, THE REGION VIII AREA IS UNDERGOING SUBSTANTIAL DEVELOPMENT. DUE TO THE RURAL, ISOLATED NATURE OF THE IMPACTED COMMUNITIES, THE EXISTING MECHANISMS OF MARKET ADJUSTMENT MAY BE INADEQUATE TO IMPORT THE REQUIRED LABOR FOR DEVELOPMENT. THROUGH 3 CASE STUDIES, THIS RESEARCH ATTEMPTED TO (1) IDENTIFY THE EXISTING MECHANISMS OF LABOR ALLOCATION, (2) IDENTIFY CONSTRAINTS TO THE PROCESS, AND (3) RECOMMEND INFORMATION OR OTHER INTERVENTION STRATEGIES THAT WOULD IMPROVE OR ASSIST THE EXISTING PROCESS.

REPORTS AND PUBLICATIONS

AN AREA REPORT: THE JIM BRIDGER PROJECT, REGIONAL ENERGY/JOBS NEWSLETTER, VOL.1, NO. 3 (JUNE 1976); LOCAL LABOR MARKETS AND ENERGY EXPANSION, REGIONAL ENERGY/JOBS NEWSLETTER, VOL. 1, NO. 6 (DEC. 1976); AN AREA REPORT: CAMPBELL COUNTY, WYOMING, REGIONAL ENERGY/JOBS NEWSLETTER, VCL. 1, NO.4, (AUG. 1976); ENERGY POLICY ISSUES, REGIONAL ENERGY/JOBS NEWSLETTER, VOL. 1, NO. 1 (FEB. 1976); LABOR MARKET INFORMATION FOR EXPANDING ENERGY PRODUCTION IN THE ROCKY MOUNTAIN NORTHERN GREAT PLAINS REGION, DRAFT, HUMAN RESOURCES INSTITUTE, NOV. 1976; LABOR ALLOCATION AND WESTERN ENERGY DEVELOPMENT-UNPUBLISHED DISSERTATION, DEPT. OF ECONOMICS, UNIV. OF UTAH.

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00001259

PROJECT TITLE

WESTERN BOOMTOWNS: THE PROBLEMS AND POSSIBLE SOLUTIONS

INVESTIGATOR(S)

L. BRONDER / D. RAPP / N. CARLISLE
DENVER, CO 80239 / (303) 391-4280

RESEARCH INSTITUTION

WESTERN GOVERNORS REGIONAL ENERGY POLICY OFFICE /

PRIMARY SPONSOR

U.S. FEDERAL ENERGY ADMINISTRATION, REGION VIII /
LAKEWOOD, CO 80225

PRIMARY FUNDING AMOUNT

28,000

TIME FRAME

JUNE 1976 TO DECEMBER 1976

LOCATION

ND / SD / WY / MT / NE / CO / AZ / NM / NV / UT

ABSTRACT

TO ASSESS AND IDENTIFY CURRENT SOCIO-ECONOMIC IMPACTS

CAUSED BY ENERGY DEVELOPMENT IN THE FOLLOWING STATES: ND, SD, WY, MT, NE, CO, AZ, NM, NV, UT. OBJECTIVES: TO IDENTIFY PUBLIC RELATED FACILITIES AND ACTIVITIES IN COMMUNITIES IMPACTED BY ENERGY DEVELOPMENT IN EACH STATE; TO RECOMMEND IMPROVEMENTS IS ASSISTANCE PROGRAMS AND STATUTORY PROVISIONS. APPROACH: AN EXAMINATION OF STATE AND LOCAL UTILIZATION OF FEDERAL PROGRAMS. RECOMMENDATIONS ARE BASED UPON THESE EVALUATIONS.

REPORTS AND PUBLICATIONS

RAPP, DONALD A., WESTERN BOOMTOWNS: PART 1: A COMPARATIVE ANALYSIS OF STATE ACTIONS , JUNE 1976, WGREPO: BRONDER, LEONARD, TAXATION OF SURFACE AND UNDERGROUND COAL MINING IN WESTERN STATES, AUGUST 1976, WGREPO: BRONDER, LEONARD, TAXATION OF COAL MINING: REVIEW WITH RECOMMENDATIONS, JANUARY 1976, WGREPO: WESTERN BOOM TOWNS: THE PROBLEMS AND POSSIBLE SOLUTIONS. FOR AVAILABILITY, INQUIRE AT WESTERN INTERSTATE ENERGY BOARD, 2500 STAPLETON PLAZA,3333 QUEBEC, DENVER, CO 80207

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00001260

PROJECT TITLE

IMPACTS OF UNCERTAINTY ON COAL SUPPLY RESPONSE WITH IMPLICATIONS FOR AGRICULTURAL RESOURCE ADJUSTMENT

PROJECT NUMBER

0070474; WYO-133-077

INVESTIGATOR(S)

R. M. ADAMS / C. E. OLSON

RESEARCH INSTITUTION

UNIV. OF WYOMING, AG. EXP. STATION / UNIV. STATION
P.O. BOX 3944 / LARAMIE, WY 82071

PRIMARY SPONSOR

U.S. DEPT. OF AGRICULTURE, COOP.STATE RESEARCH SERVICE

TIME FRAME

OCTOBER 1976 TO SEPTEMBER 1977

LOCATION

WY

ABSTRACT

COAL RESOURCES WITHIN WYOMING DISPLAY A HIGH LEVEL OF UNCERTAINTY WITH RESPECT TO FUTURE DEVELOPMENT RATES, DUE TO AN UNSTABLE INSTITUTIONAL AND ECONOMIC ENVIRONMENT. UNCERTAINTY CREATES DECISION PROBLEMS WITHIN THE PRIVATE SECTOR AND THE PUBLIC SECTOR. IMPACTS MAY BE PRONOUNCED IN THE AGRICULTURAL SECTOR, WHERE RESOURCE CONFLICTS ARE MOST SEVERE. ASSESSMENT OF THE IMPACTS OF INCREASING INSTITUTIONAL UNCERTAINTY ON DECISION MAKING WITHIN THE PRIVATE MINERAL EXTRACTION SECTOR, WITH SUBSIDIARY IMPACTS ON: FUTURE PUBLIC SECTOR REVENUE STREAMS OBTAINABLE FROM ENERGY EXTRACTION TAXATION; FUTURE TRENDS IN RESOURCE SHIFTS FROM AGRICULTURE, SPECIFICALLY WATER. FORMULATION OF OPTIMAL DECISION STRATEGIES FOR PUBLIC ADMINISTRATORS WITH RESPECT TO THE DERIVED DEMAND FOR COAL AND RESULTING EXTRACTION RATES. APPROACH: EMPIRICAL FRAMEWORK FOR MEASUREMENT OF RISK AND UNCERTAINTY-E.V. FRONTIERS AND SUBJECTIVE UTILITY FUNCTIONS. DETERMINE ALTERNATIVE SUPPLY RESPONSE AND RESOURCE TRANSFERS UNDER RISK WITH QUADRATIC PROGRAMMING (Q.P.) FORMULATION. WILL USE Q.P. TO MAXIMIZE RICARDIAN RENT ACCRUEMENT TO PUBLIC SECTOR UNDER ALTERNATIVE POLICY/TAXATION SCHEMES.

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00001261

PROJECT TITLE

A STUDY OF THE ADVANTAGES AND DISADVANTAGES OF DEVELOPING WESTERN COAL

INVESTIGATOR(S)

DUANE A. THOMPSON

RESEARCH INSTITUTION

LIBRARY OF CONGRESS, CONGRESSIONAL RESEARCH SERVICE / ENVIRONMENT & NATURAL RESOURCES POLICY DIV./ WASHINGTON, D. C. 20540 / (202) 426-5873

PRIMARY SPONSOR

U. S. CONGRESS

STATUS

COMPLETED OCTOBER 1977

LOCATION

WESTERN COAL PRODUCING STATES

ABSTRACT

THE ADVANTAGES AND DISADVANTAGES OF DEVELOPING WESTERN COAL WERE CONSIDERED IN THIS CONGRESSIONAL STUDY. AMONG THE ADVANTAGES ARE THE PHYSICAL CHARACTERISTICS OF THE COAL IN THE NORTHERN GREAT PLAINS (GREATER THICKNESS OF COAL BEDS, FEWER FEET OF OVERBURDEN IN IN COMPARISON WITH EASTERN COAL BEDS, LOWER PRODUCTION COSTS, ETC.). SOME OF THE PRIMARY DISADVANTAGES OF DEVELOPING WESTERN COAL INCLUDE THE FOLLOWING: (1) MUCH GREATER DISTANCES OVER WHICH THE COAL MUST BE SHIPPED IN ORDER TO REACH EASTERN MARKETS; (2) INTRICACIES OF THE PERMITTING SYSTEMS NECESSARY FOR THE OPENING OF A WESTERN MINE; (3) HIGH SEVERANCE TAXES ON THE LOWER-BTU COAL BEING PRODUCED IN SOME OF THE WESTERN MINES; (4) RECENT BEST AVAILABLE CONTROL TECHNOLOGY (BACT) FOR STACK GAS EMISSIONS CURRENTLY BEING CONSIDERED IN CONGRESS; AND (5) CURRENT ADMINISTRATION COAL LEASING POLICY. THE STUDY CONCLUDED THAT THE ONCE OVERWHELMING ADVANTAGES TO THE DEVELOPMENT OF WESTERN COAL ARE NOW BEING OVERSHADOWED BY DISADVANTAGES RESULTING PRIMARILY FROM INCREASED GOVERNMENT REGULATION RELATED TO THE OPENING OF SURFACE MINES IN THE WEST.

REPORTS AND PUBLICATIONS

ADVANTAGES AND DISADVANTAGES OF DEVELOPING WESTERN COAL.

BY DUANE A. THOMPSON, ENVIRONMENT & NATURAL RESOURCES POLICY DIVISION, THE LIBRARY OF CONGRESS, CONGRESSIONAL RESEARCH SERVICE, WASHINGTON, D.C. OCTOBER 31,1977.

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00001262

PROJECT TITLE

NATIVE AMERICANS AND ENERGY DEVELOPMENT

INVESTIGATOR(S)

HARRIS ARTHUR / JOSEPH JORGENSEN / RICHARD CLEMMER / LYNN ROBBINS / NANCY OWENS / RONALD LITTLE

RESEARCH INSTITUTION

ANTHROPOLOGY RESOURCE CENTER, INC. / P. O. BOX 90 / CAMBRIDGE, MA 02138 / (617) 491-3261

PRIMARY SPONSOR

INDEPENDENT FUNDING FROM FOUNDATIONS AND INDIVIDUALS

STATUS

COMPLETED NOVEMBER 1978

LOCATION

UT / AZ / MT / NM

ABSTRACT

THIS STUDY PROVIDED AN OVERVIEW OF THE SOCIAL AND CULTURAL EFFECTS OF ENERGY PROJECTS ON THE HOPI, NAVAJO, AND NORTHERN CHEYENNE TRIBES AND ON ENERGY BOOM TOWNS IN THE WEST. THE STUDY CONCLUDED THAT AS ENERGY DEVELOPMENT COMPANIES SCOUR THE WESTERN UNITED STATES FOR DEPOSITS OF URANIUM, COAL AND OIL, AMERICAN INDIANS SCATTERED THROUGHOUT THE REGION MAY BE PUT IN AN UNNECESSARY SQUEEZE THAT COULD TEAR THE SOCIAL AND CULTURAL FABRIC OF THEIR LIFE. HOWEVER, GIVEN ADEQUATE INFORMATION AND GUIDANCE, INDIANS CAN SUCESSFULLY NEGOTIATE CONTRACTS WITH DEVELOPERS THAT WILL BENEFIT BOTH THE INDIAN TRIBE AND THE DEVELOPER AND NOT LEAVE THE INDIANS WITH LONG-TERM PROBLEMS RESULTING FROM RELATIVELY SHORT-TERM ECONOMIC GAINS.

THE STUDY TEAM ESTIMATED THAT 23 INDIAN TRIBES IN 10 WESTERN STATES, REPRESENTING SOME TWO THIRDS OF THE TOTAL INDIAN POPULATION, CONTROL 33 PERCENT OF THE COUNTRY'S LOW-SULPHUR, STRIPPABLE COAL; 80 PERCENT OF U.S. URANIUM RESERVES; AND UP TO 10 PERCENT OF PETROLEUM AND GAS RESERVES.

REPORTS AND PUBLICATIONS

'NATIVE AMERICANS AND ENERGY DEVELOPMENT,' JOSEPH G. JORGENSEN, ET AL, ANTROPOLOGY RESOURCE CENTER, NOVEMBER, 1978. THE COST OF THE REPORT IS $4.00 FOR INDIVIDUALS, $6.00 FOR LIBRARIES AND NON-PROFIT ORGANIZATIONS, AND $10.00 FOR BUSINESS AND GOVERNMENT.

1.6 ENERGY CONVERSION AND TRANSPORT

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00001263
PROJECT TITLE
   EXPERIMENTAL AND THEORETICAL UNDERGROUND COAL GASIFICATION
   STUDIES
PROJECT NUMBER
   TASK AGREEMENT #006 LETC/RMIEE: CONTRACT #ET-77-S-03-1761
INVESTIGATOR(S)
   ROBERT D. GUNN / UNIV. OF WYOMING. DEPT. OF MINERAL
   ENGINEERING / (307)766-3284
   WILLIAM B. KRANTZ / UNIV. OF COLORADO. DEPT. OF CHEMICAL
   ENGINEERING / BOULDER CO 80302
RESEARCH INSTITUTION
   UNIV. OF WYOMING. RMIEE / BOX 3965. UNIV. STATION /
   LARAMIE. WY 82071 / (307)766-6760
PRIMARY SPONSOR
   U.S. DEPT. OF ENERGY. LARAMIE ENERGY TECH. CENTER
   JOHN MCKAY / 9TH AND LEWIS / LARAMIE. WY 82070
   (307)721-2323
PRIMARY FUNDING AMOUNT
   1977 - 29.394 / 1978 - 24.886
TIME FRAME
   AUGUST 1977 TO CONTINUING
LOCATION
   WY / CARBON CO. / HANNA
ABSTRACT
   THIS IS THE CONTINUATION OF A PROGRAM INITIATED THREE
   TESTING
   CARBON CO.. WY
   HANNA. WY
   IN-SITU PROCESSING
   INTEGRATED WITH THE DEPT. OF ENERGY'S FIELD TESTING
   PROGRAM FOR UCG WHICH HAS BEEN IN PROGRESS FOR FIVE
   AND A HALF YEARS AT HANNA. WYOMING.  THE OBJECTIVE OF
   THIS WORK IS TO INCREASE OUR UNDERSTANDING OF THE UCG
   PROCESS. TO INTERPRET FIELD TEST RESULTS. AND THROUGH
   IMPROVED UNDERSTANDING AND DESIGN TO ENHANCE THE PER-
   FORMANCE OF FUTURE FIELD TESTS.
STUDY AFFILIATION
   THIS PROJECT IS A CONTINUATION OF 'IN-SITU COAL GASIFICATION'
   ERIS PROJECT NUMBER 00000791. ERIS PROJECTS REPORT.
   VOL.2. NO. 2. APRIL 1977
        *****



00001264
PROJECT TITLE
   MHD MANAGEMENT-MONTANA STATE UNIVERSITY
INVESTIGATOR(S)
   DENNIS O. BLACKKETTER
RESEARCH INSTITUTION
   MONTANA STATE UNIV./ MHD AND ENERGY RESEARCH / BOZEMAN /
   MT 59717/ (406) 994-4491
PRIMARY SPONSOR
   U.S. DEPT. OF ENERGY
PRIMARY FUNDING AMOUNT
   1975 - 1978 - $125.000/ 1979 - $40.000
TIME FRAME
   MARCH 1975 TO SEPTEMBER 1979
LOCATION
   MT / GALLATIN CO. / BOZEMAN
ABSTRACT
   THIS PROJECT IS FOR THE ADMINISTRATION OF THE OTHER
   SIX MONTANA STATE UNIVERSITY MHD RESEARCH TASKS.
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00001265
PROJECT TITLE
   INVESTIGATION OF ELECTRIC POWER AND AGRICULTURAL COM-
   PATIBILITY IN MAPP REGION
PROJECT NUMBER
   M-50167
INVESTIGATOR(S)
   R. J. GUSTAFSON
RESEARCH INSTITUTION
   UNIV. OF MINNESOTA. DEPT. OF AG. ENGINEERING / ST. PAUL.
   MN  55108 / (612) 373-1359
PRIMARY SPONSOR
   MID-CONTINENT AREA POWER POOL / MINNEAPOLIS. MN
PRIMARY FUNDING AMOUNT
   24.900
LOCATION
   ND SD IA NE WI MN
ABSTRACT
   ASSEMBLE A BIBLIOGRAPHY OF AVAILABLE LAND USE DATA.  THIS
   WILL BE COLLECTED FROM APPROPRIATE STATE AGRICULTURAL
   AND PLANNING AGENCIES IN EACH STATE OF THE STUDY REGION
   (ND. SD. NB. IA. MN. WI ).  POWER GENERATION AND
   TRANSMISSION DATA BOTH PRESENT AND PROJECTED FOR THE REGION
   WILL BE ASSEMBLED.  A QUANTITATIVE STUDY OF THE PHYSICAL
   IMPACTS OF TRANSMISSION FACILITIES ON AGRICULTURAL LAND
   USE IS TO BE DEVELOPED. PARTICULAR EMPHASIS IS BEING PLACED
   ON SPRINKLER IRRIGATION.  POSSIBLE POTENTIAL
   CONFLICT AREAS WILL BE IDENTIFIED AND ESTIMATES OF THE
   SEVERITY AND SENSITIVITY PROJECTED.
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00001266

PROJECT TITLE

MONTANA POWER COMPANY'S ELECTRIC ENERGY FORECAST

INVESTIGATOR(S)

ROBERT C. STUART / PAUL POLZIN

RESEARCH INSTITUTION

MONTANA POWER COMPANY / 40 EAST BROADWAY / BUTTE. MT
59701 / (406) 723-5421

PRIMARY SPONSOR

MONTANA POWER CO.

TIME FRAME

JANUARY 1978 TO CONTINUING

LOCATION

MT / 36 COUNTIES / PARTS OF YELLOWSTONE PARK

ABSTRACT

THE OBJECTIVE OF MONTANA POWER COMPANY. AS IN THE PAST. IS TO CONTINUALLY REFINE OUR METHODS OF FORECASTING FUTURE ELECTRICAL LOADS FOR OUR SERVICE TERRITORY. PRESENTLY WE ARE WORKING ON THE DEVELOPMENT OF AN ECONOMETRIC MODEL WHICH WILL INCLUDE SUCH INPUT PARAMETERS AS AS POPULATION. OTHER DEMOGRAPHIC FACTORS. INCOME. PRICES AND COMMERCIAL AND INDUSTRIAL OUTPUT MEASUREMENTS. THE MODEL WHEN COMPLETED WILL BE SUBJECT TO CONTINUAL REFINEMENT. WITH MODIFICATIONS MADE WHEN CONDITIONS WARRANT SUCH CHANGES.

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00001267

PROJECT TITLE

A STUDY OF OVERHEAD TRANSMISSION LINES AND THEIR IMPACT ON WILDLIFE

INVESTIGATOR(S)

LARRY S. THOMPSON

RESEARCH INSTITUTION

MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION.
ENERGY DIV. / 32 SOUTH EWING / HELENA. MT 59601 /
(406) 449-3780

PRIMARY SPONSOR

MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION. ENERGY DIV.

TIME FRAME

AUGUST 1974 TO NOVEMBER 1977

STATUS

COMPLETED NOVEMBER 1977

LOCATION

MT

ABSTRACT

THE PURPOSE OF THIS STUDY WAS TO PROVIDE AN OVERVIEW OF THE POTENTIAL IMPACTS OF TRANSMISSION LINES UPON WILDLIFE. AND SUGGESTIONS ON HOW IMPACTS OF NEW LINES MAY BE PREVENTED OR MITIGATED. IT WAS BASED UPON EXPERIENCE WITH TRANSMISSION LINE SITING AND IMPACT STUDIES IN MONTANA AND THUS PLACES EMPHASIS ON MONTANA VERTBRATES AND HABITATS. ALTHOUGH FINDINGS FROM OTHER REGIONS OF THE UNITED STATES. NOTABLY THE EASTERN DECIDUOUS WOODLAND. WERE ALSO INCLUDED. EXPERIENCE HAS SHOWN THAT THE GREATEST RISK OF SIGNIFICANT IMPACTS OF TRANSMISSION LINES ON WILDLIFE GENERALLY INVOLVES :(1) THE LONG-TERM FRAGMENTATION OF ROADLESS 'WILDERNESS-LIKE' HABITAT (INCLUDING SECURITY AREAS FOR LARGE MAMMALS) BY CLEARED RIGHTS-OF-WAY OR BY ACCESS ROADS. SINCE THIS GENERALLY RESULTS IN INCREASED HUMAN USE OF THE AREAS; (2) DISTURBANCE OF BREEDING SITES OF BIRDS (ESPECIALLY RAPTORS AND COLONIAL SPECIES) BY CONSTRUCTION ACTIVITIES OR BY HUMAN USE OF ACCESS ROADS OR CLEARED RIGHTS-OF-WAY; AND (3) INCREASED MORTALITY RATES OF BIRDS (ESPECIALLY WATERFOWL) DUE TO COLLISIONS WITH CONDUCTORS OR OTHER STRUCTURES. ALSO IMPORTANT ARE THE EFFECTS OF INCREASED HUMAN ACCESS ON RECREATIONAL USE OF WILDLIFE. ESPECIALLY HUNTING; SUCH ACCESS MAY RESULT IN MORE RESTRICTIVE LOCAL HUNTING REGULATIONS. (MEO)

REPORTS AND PUBLICATIONS

OVERHEAD TRANSMISSION LINES-IMPACT ON WILDLIFE. RESEARCH REPORT. NO. 2. BY LARRY S. THOMPSON. AVAILABLE FROM MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION. ENERGY DIV.. HELENA. MT. 1977.

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00001268

PROJECT TITLE

AN ASSESSMENT OF RADIONUCLIDES IN THE COAL FUEL CYCLE. I. PRELIMINARY STUDIES OF WESTERN COAL

INVESTIGATOR(S)

C. E. STYRON

RESEARCH INSTITUTION

MONSANTO RESEARCH CORP. / P.O. BOX 32 / MIAMISBURG. OH
45342 / (513) 866-7444 EXT. 3613

PRIMARY SPONSOR

U.S. DEPT. OF ENERGY

SECONDARY SPONSOR

U.S. EPA / U.S. FEDERAL ENERGY ADMINISTRATION

PRIMARY FUNDING AMOUNT

84.000

SECONDARY FUNDING AMOUNT(S)

35.000(EPA) / 25.000(FEA)

TIME FRAME

JUNE 1976 TO SEPTEMBER 1978

LOCATION

MT / WY / SD / NM / AZ / CO

ABSTRACT

THIS RESEARCH PROGRAM WAS INITIATED TO (I) INVESTIGATE THE FATE OF RADIONUCLIDES IN THE COAL FUEL CYCLE USING A REPRESENTATIVE COAL BURNING POWER PLANT, AND WHERE POSSIBLE, TO INDICATE THE SCOPE OF THE POTENTIAL ENVIRONMENTAL AND HUMAN HEALTH PROBLEMS ASSOCIATED WITH EFFICIENCY OF EMISSION REACTANTS, AND STACK EFFLUENTS. U-238, U-234, PB-210, PO-210, AND TH-230 IN COAL: (3) TO STUDY THE RELEASE, FATE, AND ACCUMULATION OF OF RADIONUCLIDES FROM A POWER PLANT BURNING WESTERN COAL; AND (4) TO ASSESS THE POSSIBLE NEED FOR ADDITIONAL CONTROL TECHNOLOGY OR STANDARDS. AND SCRUBBER SLUDGE PONDS SHOULD BE DETERMINED.

STUDY AFFILIATION

THIS PROJECT IS RELATED TO ' AN ASSESSMENT OF RADIONUCLIDES IN THE COAL FUEL CYCLE. II. AN ASSESSMENT OF RADIONUCLIDES IN AND MIGRATION FROM COAL ASH AND SCRUBBER SLUDGE PONDS.' PROJECT NUMBER 0000 . ENERGY RESEARCH INFORMATION SYSTEM, VOLUME 3, NO. 2, DECEMBER 1978.

REPORTS AND PUBLICATIONS

STYRON, C.E., ET AL. 1978. ASSESSMENT OF THE RADIOLOGICAL IMPACT OF COAL UTILIZATION. I. PRELIMINARY STUDIES ON WESTERN COAL. MLM-2514. MONSANTO RESEARCH CORP., MIAMISBURG, OH 45342 (IN PRESS)

STYRON, C.E. AND B. ROBINSON. 1978. PRELIMINARY ASSESSMENT OF THE RADIOLOGICAL IMPACT OF WESTERN COAL UTILIZATION. FOURTH JOINT CONFERENCE ON SENSING OF ENVIRONMENTAL POLLUTANTS. NEW ORLEANS, LA, NOVEMBER 1977.

STYRON, C.E. 1978A. PRELIMINARY ASSESSMENT OF THE RADIOLOGICAL IMPACT OF RADIONUCLIDES IN WESTERN COAL ON HEALTH AND ENVIRONMENT. SECOND NATIONAL CONFERENCE AND EXHIBITION ON TECHNOLOGY FOR ENERGY CONSERVATION, ALBUQUERQUE, NM, JANUARY 1978. INFORMATION TRANSFER, INC. 1160 ROCKVILLE PIKE, ROCKVILLE, MD 20852. PP.369-374.

STYRON, C. E. 1978B. AN ASSESSMNET OF NATURAL RADIONUCLIDES IN THE COAL FUEL CYCLE. NATURAL RADIATION ENVIRONMENT III SYMPOSIUM, HOUSTON, TX, APRIL 1978.

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00001269

PROJECT TITLE

ANASSESSMENT OF RADIONUCLIDES IN THE COAL FUEL CYCLE. II. AN ASSESSMENT OF RADIONUCLIDES IN AND MIGRATION FROM COAL ASH AND SCRUBBER SLUDGE PONDS.

INVESTIGATOR(S)

C. E. STYRON

RESEARCH INSTITUTION

MONSANTO RESEARCH CORP. / P.O. BOX 32 / MIAMISBURG, OH 45342 / (513) 866-7444 EXT. 3513

PRIMARY SPONSOR

U.S. DEPT. OF ENERGY

PRIMARY FUNDING AMOUNT

100,000

TIME FRAME

AUGUST 1978 TO SEPTEMBER 1979

LOCATION

MT / WY / SD / NM / AZ / CO

ABSTRACT

DURING PHASE II OF THE ASSESSMENT OF THE RADIOLOGICAL IMPACT OF WESTERN COAL UTILIZATION EFFORTS WILL CENTER ON COAL COMBUSTION REFUSE. THE ACCUMULATION OF RADIONUCLIDES IN AN ASH POND IS RELATED TO RADIONUCLIDE CONCENTRATION OF FEED COAL, AMOUNT OF COAL BURNED THE FRACTION OF RN-222 (GROWING IN FROM DECAY OF RA-226) WHICH DIFFUSES THROUGH THE ASH TO THE ATMOSPHERE VARIES WITH ATMOSPHERIC PRESSURE, TEMPERATURE, DENSITY OF THE ASH, AND A NUMBER OF OTHER PARAMETERS. THE POTENTIAL FOR RELEASE OF RN-222 TO THE ATMOSPHERE FROM COAL ASH

STUDY AFFILIATION

THIS PROJECT IS A CONTINUATION OF 'AN ASSESSMENT OF RADIONUCLIDES IN THE COAL FUEL CYCLE. I. PRELIMINARY STUDIES OF WESTERN COAL.' PROJECT NUMBER 0000 . ENERGY RESEARCH INFORMATION SYSTEM PROJECT REPORT, VOLUME 3, NO.2, DECEMBER 1978.

REPORTS AND PUBLICATIONS

SEE PHASE I FOR REPORTS AND PUBLICATIONS

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00001270

PROJECT TITLE

DISPOSAL OF HIGH ALKALINE FLY ASH SLUDGE IN A DECOALED MINE SEAM

PROJECT NUMBER

E6244-048 / R805459

INVESTIGATOR(S)

J. W. JONES / O. E. MANZ / G. H. GROENEWOLD / Y. HUNG

RESEARCH INSTITUTION

UNIV. OF NORTH DAKOTA

COOPERATOR

NORTH DAKOTA GEOLOGICAL SURVEY

PRIMARY SPONSOR

U. S. EPA, OFFICE OF RESEARCH & DEV.

PRIMARY FUNDING AMOUNT

FY77-236,000

TIME FRAME

SEPTEMBER 1977 TO AUGUST 1979

LOCATION

ND

ABSTRACT

OBJECTIVES: TO DETERMINE THE ENVIRONMENTAL EFFECTS OF

SLUDGE DISPOSAL FROM A LIGNITE FLY ASH SO2 SCRUBBER (AT THE MILTON R. YOUNG POWER STATION, CENTER, ND) IN A DECOALED OPEN PIT MINE. MONITOR THE GROUNDWATER AND LEACHATE IN THE PROXIMITY OF THE BURIED SLUDGE, AS WELL AS AN EXPOSED SURFACE SLUDGE POND. INVESTIGATE THE PROPERTIES OF SLUDGE. APPROACH: (1) STUDY AVAILABLE MINE, SLUDGE, AND SLUDGE DISPOSAL CHARATERIZATIONS FROM A 3-YEAR MINING PLAN AND LABORATORY ANALYSES OF PILOT PLANT SLUDGE; (2) CONDUCT ADDITIONAL SLUDGE AND MINE CHARACTERIZATION; (3) CONDUCT EXTENSIVE SAMPLING AND TESTING PRIOR TO AND SUBSEQUENT TO: (A) CONSTRUCTION OF AN EXPOSED SURFACE SLUDGE POND, AND (B) INSTALLATION OF SEVERAL GROUNDWATER AND LEACHATE WELLS IN PROXIMITY OF BURIED SLUDGE IN THE DECOALED MINE SEAM AND SLUDGE POND, ANALYSES OF GROUNDWATER, LEACHATE, SUPERNATANT, SLUDGE AND SOIL FOR 15 MONTH PERIOD; (4) OBTAIN AND COMPILE COST INFORMATION FROM THE POWER PLANT FOR INCLUSION IN AN ECONOMY STUDY BY ARTHUR D. LITTLE, INC. OF DISPOSAL OF SLUDGE IN DECOALED MINE SEAM; (5) ASSESS THE DATA AND PREPARE THE FINAL REPORT, TO BE INCORPORATED IN AN ARTHUR D. LITTLE REPORT FOR CONTRACT 68-03-2334.

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00001271

PROJECT TITLE
   MONITORING OF TRACE COMPONENTS FROM THE HANNA IV IN SITU COAL GASIFICATION TEST
PROJECT NUMBER
   R6234-619 / D7-0118S
INVESTIGATOR(S)
   G. L. HUFFMAN / D. FISCHER
RESEARCH INSTITUTION
   U. S. DEPT. OF ENERGY
PRIMARY SPONSOR
   U. S. EPA, OFFICE OF RESEARCH & DEV.
PRIMARY FUNDING AMOUNT
   FY77-100,000
TIME FRAME
   JULY 1977 TO JULY 1978
STATUS
   COMPLETED JULY 1978
LOCATION
   WY / HANNA
ABSTRACT

THE LINKED VERTICAL WELL IN SITU COAL GASIFICATION PROCESS IS BEING DEVELOPED BY ERDA LARAMIE ENERGY RESEARCH CENTER AT HANNA, WYOMING. THE OBJECTIVE OF OF THIS RESEARCH WORK IS TO CHARACTERIZE GASEOUS EMISSIONS FOR THIS PROCESS. THE APPROACH CONSISTS OF MONITORING THE LOW BTU GAS DURING THE FULL LIFETIME OF THE HANNA IV IN SITU COAL GASIFICATION TEST TO DETERMINE THE CONCENTRATIONS OF SPECIFIC TRACE COMPONENTS AND THEIR VARIATION AS A FUNCTION OF TIME. CURRENT PLANS ARE TO CONDUCT INVESTIGATIONS BEGINNING SEPTEMBER 1, 1977 AND CONCLUDING OF FEBRUARY 28, 1978.

1.7 MINING AND EXTRACTION METHODOLOGY

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00001272
PROJECT TITLE
DRILLING AND TESTING FOR DEGASIFICATION POTENTIAL OF COALBEDS
INVESTIGATOR(S)
R. M. BENCH / J. R. LEVINE / M. DEUL
RESEARCH INSTITUTION
U.S. BUREAU OF MINES. MINING & SAFETY RESEARCH CTR.
4800 FORBES AVE. / PITTSBURGH. PA 15213
PRIMARY SPONSOR
U.S. BUREAU OF MINES / 19TH & C STS.. N.W. / WASHINGTON. D. C. 20240
TIME FRAME
JULY 1976 TO JUNE 1978
LOCATION
WY / TX / MI / IA / CO / AZ
ABSTRACT
VAST COAL RESOURCES NOT NOW MINED EXTENSIVELY ARE TO BE FOUND IN TEXAS, MICHIGAN, IOWA, WYOMING, UTAH, COLORADO, ARIZONA AND WASHINGTON. DEEP COALBEDS, THAT MAY BE GASSY AND HAVE NOT BEEN DEVELOPED HERETOFORE, WILL SOON BE SERIOUSLY CONSIDERED FOR IMMEDIATE MINING. IT IS NECESSARY TO DETERMINE, BY DRILLING AND TESTING, THE GAS PRODUCTION POTENTIAL OF THESE COALBEDS SO THAT THE GAS CAN BE REMOVED FOR UTILIZATION AND TO MAKE THE COALBEDS SAFER TO MINE AND MORE ATTRACTIVE FOR EARLY DEVELOPMENT

1.8 GEOLOGIC STUDIES

00001273

PROJECT TITLE

GEOLOGY AND COAL RESOURCES OF THE ACME QUADRANGE, SHERIDAN COUNTY, WYOMING AND BIG HORN COUNTY, MONTANA

PROJECT NUMBER

INT-9C45-73

RESEARCH INSTITUTION

U.S. GEOLOGICAL SURVEY, CONSERVATION DIV. / DENVER, CO 80225

PRIMARY SPONSOR

U.S. GEOLOGICAL SURVEY, CONSERVATION DIV.

TIME FRAME

JULY 1975 TO JUNE 1976

LOCATION

MT / BIG HORN CO / WY / SHERIDAN CO. / ACME QUADRANGLE

ABSTRACT

THE ACME QUADRANGLE WILL BE OPEN-FILED AND/OR PUBLISHED IN CALENDAR YEAR 1976.

00001274
PROJECT TITLE
ARCHAEOLOGICAL SURVEY OF THE PEARL AREA
INVESTIGATOR(S)
MICHAEL L. GREGG
RESEARCH INSTITUTION
MONTANA COLLEGE OF MINERAL SCIENCES AND TECHNOLOGY /
MINERAL RESOURCES CENTER / BUTTE, MT 59710 (406)494-2778
PRIMARY SPONSOR
SHELL OIL CO.
TIME FRAME
JULY 1976 TO APRIL 1977
STATUS
COMPLETED APRIL 1977
LOCATION
MT / BIG HORN CO. / T9S, R38E, SECTION 36 - PARTIAL;
T10S, R38E, SECTION 1 - PARTIAL; T9S, R39E, SECTION
29 - PARTIAL, 32:ALL, 33:ALL, 34:PARTIAL
ABSTRACT

THE ARCHAEOLOGICAL INVENTORY AND ASSESSMENT WORK IN THIS STUDY WAS CONDUCTED FOR AND SPONSORED BY SHELL OIL CO. SHELL OIL PLANS TO STRIPMINE PORTIONS OF LEASED LANDS LYING TO THE SOUTHWEST OF DECKER, MONTANA IN BIG HORN CO., FOR COAL DEPOSITS. THE MONTANA STRIP AND UNDERGROUND MINE RECLAMATION ACT SETS POLICY TO PRESERVE THE STATE'S HISTORIC AND ARCHAEOLOGICAL SITES THROUGH REQUIRING COMPREHENSIVE RECLAMATION PLANS PRIOR TO ISSUING MINING PERMITS. FIFTEEN PREHISTORIC CULTURAL SITES WERE STUDIED IN THE SURVEYED AREA.

PROJECT FINDINGS: THERE IS LITTLE OR NO DEPTH TO THE DEPOSITS OF PREHISTORIC ACTIVITY DEBRIS AT MOST OF THESE ARCHAEOLOGICAL SITES. FOR SITES OF THIS NATURE, SURFACE COLLECTION OF ALL VISIBLE MATERIALS SERVED TO PROVIDE DETAILED SITE ASSESSMENT INFORMATION AS WELL AS TO MITIGATE POTENTIAL IMPACT TO THE SITES FROM DISTURBANCES RELATED TO PROPOSED MINING ACTIVITIES. DETAILED ANALYSES OF THE RECOVERED CULTURAL MATERIALS IS PRESENTED TO CONTRIBUTE TO THE KNOWLEDGE OF CULTURAL HISTORY AND CULTURAL PROCESS IN THE UPPER TONGUE RIVER DRAINAGE AREA.

DURING THE FIELDWORK PHASE OF THIS PROJECT IT WAS NOT POSSIBLE TO CONDUCT IMPACT MITIGATING EFFORTS AT ALL OF THE LOCATED SITES. RECOMMENDATIONS ARE PRESENTED FOR FURTHER WORK AT A MIDDLE AND LATE PREHISTORIC PERIOD, MULTI-COMPONENT, BASE CAMP SITE AND AT A ROCK SHELTER/HUNTING CAMP SITE. THE RECOMMENDATIONS FOR IMPACT MITIGATING EFFORTS RELATE TO THE SIGNIFICANCE OF THESE TWO SITES WITHIN THE FRAMEWORK OF LOCAL PREHISTORY. AVOIDANCE IS RECOMMENDED AS THE IMPACT MITIGATING EFFORT THAT IS MOST APPROPRIATE FOR THREE ADDITIONAL SITES. (MEO)

REPORTS AND PUBLICATIONS
GREGG, MICHAEL L. REPORT OF INVESTIGATION NO. 3, ARCHAEOLOGICAL SURVEY OF THE PEARL AREA, APRIL 1977.
AVAILABLE FROM MONTANA TECH. ALUMNI FOUNDATION, BUTTE, MT.
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00001275
PROJECT TITLE
1976 HOLMES-DECKER ARCHAEOLOGICAL SURVEY
INVESTIGATOR(S)
MICHAEL L. GREGG
RESEARCH INSTITUTION
MONTANA COLLEGE OF MINERAL SCIENCES AND TECHNOLOGY
MINERAL RESEARCH CENTER / BUTTE, MT 59701 (406)494-2778
PRIMARY SPONSOR
DECKER COAL CO.
TIME FRAME
JUNE 1976 TO MARCH 1977
STATUS
COMPLETED MARCH 1977
LOCATION
MT / BIG HORN CO. / T8S, R41E, SECTIONS 31-34;
T9S, R41E, SECTION 3
ABSTRACT

THE ARCHAEOLOGICAL INVENTORY AND ASSESSMENT WORK IN THIS STUDY WAS CONDUCTED FOR AND SPONSORED BY DECKER COAL CO. DECKER COAL PLANS TO STRIP MINE LEASE LANDS LYING TO THE EAST OF THE TONGUE RIVER RESERVOIR IN BIG HORN CO., MT FOR COAL DEPOSITS. THE MONTANA STRIP & UNDERGROUND MINE RECLAMATION ACT SETS POLICY TO PRESERVE THE STATE'S HISTORIC AND ARCHAEOLOGICAL SITES THROUGH REQUIRING COMPREHENSIVE RECLAMATION PLANS PRIOR TO ISSUING MINING PERMITS. TWENTY PREHISTORIC CULTURAL SITES WERE STUDIED IN THE SURVEYED AREA.

PROJECT FINDINGS: THERE IS LITTLE OR NO DEPTH TO THE DEPOSITS OF PREHISTORIC ACTIVITY DEBRIS AT MOST OF THESE ARCHAEOLOGICAL SITES. FOR SITES OF THIS NATURE, SURFACE COLLECTION OF ALL VISIBLE MATERIALS SERVED TO PROVIDE DETAILED SITE ASSESSMENT INFORMATION AS WELL AS TO MITIGATE POTENTIAL IMPACT TO THE SITES FROM DISTURBANCES RELATED TO PROPOSED MINING ACTIVITIES. DETAILED ANALYSES OF THE RECOVERED CULTURAL MATERIALS WERE MADE TO CONTRIBUTE TO THE KNOWLEDGE OF CULTURE HISTORY OF THE UPPER TONGUE RIVER DRAINAGE AREA.

DURING THE FIELDWORK PHASE OF THIS PROJECT IT WAS NOT POSSIBLE TO CONDUCT IMPACT MITIGATING EFFORTS AT ALL OF THE LOCATED SITES. RECOMMENDATIONS ARE PRESENTED FOR FURTHER WORK AT A LATE PREHISTORIC PERIOD TIPI RING SITE BECAUSE OF THE SITE'S SIGNIFICANCE TO THE LOCAL AND REGIONAL PRE-

HISTORY. IT IS ALSO RECOMMENDED THAT ONE OF THE SITES BE AVOIDED, IF POSSIBLE, BY MINING ACTIVITIES. (MEO)

REPORTS AND PUBLICATIONS

MICHAEL L. GREGG. REPORTS OF INVESTIGATIONS NO. 2, 1976 HOLMES-DECKER ARCHAEOLOGICAL SURVEY. MARCH 1977. AVAILABLE FROM MONTANA TECH FOUNDATION, ARCHAEOLOGY & CULTURAL RESOURCES DIV. / MINERAL RESOURCES CENTER / BUTTE, MT 59701

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00001276

PROJECT TITLE

ARCHAEOLOGICAL SURVEY AT CX DECKER (1976-1977)

INVESTIGATOR(S)

MICHAEL L. GREGG

RESEARCH INSTITUTION

MONTANA COLLEGE OF MINERAL SCIENCES AND TECHNOLOGY
MINERAL RESEARCH CENTER / BUTTE, MT 59701 (406)494-2778

PRIMARY SPONSOR

DECKER COAL CO.

TIME FRAME

SEPTEMBER 1976 TO MAY 1977

STATUS

COMPLETED MAY 1977

LOCATION

MT / BIG HORN CO. (NEAR MT-WY BORDER) IMMEDIATELY EAST OF THE CROW RESERVATION / T9S, R39E, SECTIONS 13,14,23,24,25,26 PARTIAL: T9S, R40E, SECTIONS 17,18,19,20,21,28,29,30, 31,32,33 - PARTIAL

ABSTRACT

THE ARCHAEOLOGICAL INVENTORY AND ASSESSMENT WORK REPORTED HERE WAS CONDUCTED FOR AND SPONSORED BY DECKER COAL CO. DECKER COAL PLANS TO STRIP MINE PORTIONS OF THE LEASE LANDS SURROUNDING DECKER, MT IN BIG HORN CO. FOR COAL DEPOSITS. THE MONTANA STRIP AND UNDERGROUND MINE RECLAMATION ACT SETS POLICY TO PRESERVE THE STATE'S HISTORIC AND ARCHAEOLOGICAL SITES THROUGH REQUIRING COMPREHENSIVE RECLAMATION PLANS PRIOR TO ISSUING MINING PERMITS. FORTY-TWO PREHISTORIC CULTURAL SITES ARE REPORTED HERE FOR THE APPROXIMATELY 6200 ACRES OF SURVEYED AREA.

PROJECT FINDINGS: THERE IS LITTLE OR NO DEPTH TO THE DEPOSITS OF PREHISTORIC ACTIVITY DEBRIS AT MOST OF THESE ARCHAEOLOGICAL SITES. DURING THE FIELDWORK PHASE OF THIS PROJECT IT WAS NOT POSSIBLE TO CONDUCT IMPACT MITIGATING EFFORTS AT ALL OF THE LOCATED SITES. IF THE ENTIRE 6200 ACRE AREA WERE TO BE DIRTLY IMPACTED BY STRIP MINING ACTIVITIES, MITIGATION OF DESTRUCTIVE FORCES UPON THE CULTURAL RESOURCES WOULD INVOLVE CONTROLLED SURFACE COLLECTIONS OR EXCAVATIONS AT NEARLY HALF OF THE RECORDED SITES. SOME SITES EXIST IN AREAS THAT WILL NOT BE DIRECTLY IMPACTED BY THE PROPOSED MINING ACTIVITIES. THESE SITES SHOULD BE AVOIDED: SITE SURFACE LANDSCAPES SHOULD REMAIN UNALTERED. ARCHAEOLOGICAL RESULTS OF THE PROJECT DEMONSTRATE PREHISTORIC ACTIVITES IN THE SURVEYED AREA FROM EARLY IN THE PLANO PERIOD (C. 9700 B.P.) CONTINUOUSLY THROUGH LATE IN THE LATE PREHISTORIC PERIOD (C.300 B.P.) THE TIPI RING OR STONE CIRCLE IS A COMMON CULTURAL FEATURE, PETROGLYPHS OCCUR, AND A VARIETY OF SITE TYPES ARE FOUND, INCLUDING BASE CAMPS, TRANSIENT CAMPS, HUNTING CAMPS, AND PORCELLANITE PROCUREMENT-WORKSHOPS. (MEO)

REPORTS AND PUBLICATIONS

MICHAEL L. GREGG. REPORTS OF INVESTIGATIONS NO. 5: ARCHAEOLOGICAL SURVEY AT CX DECKER (1976-1977). MAY 1977. AVAILABLE FROM MONTANA TECH ALUMNI FOUNDATION, ARCHAEOLOGY AND CULTURAL RESOURCES DIV. / MINERAL RESEARCH CENTER / BUTTE, MT 59701

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00001277

PROJECT TITLE

ARCHAEOLOGY OF EAST DECKER AND THE NORTH EXTENSION

INVESTIGATOR(S)

LYNN B. FREDLUND

RESEARCH INSTITUTION

MONTANA COLLEGE OF MINERAL SCIENCES AND TECHNOLOGY
MINERAL RESEARCH CENTER / BUTTE, MT 59701 (406)494-2778

TIME FRAME

FEBRUARY 1973 TO JUNE 1977

STATUS

COMPLETED JUNE 1977

LOCATION

MT / BIG HORN CO. / ON BOTH THE EAST AND WEST SIDE OF THE TONGUE RIVER RESERVOIR IN T8-9S, R40-41E

ABSTRACT

THIS ARCHAEOLOGICAL SURVEY AND ASSESSMENT SURVEY ON THE EAST DECKER AND NORTH EXTENSION WAS CONDUCTED FOR THE DECKER COAL CO. THE PURPOSE OF THE PROJECT WAS TO ASSESS AND RECOMMEND MITIGATION PROCEDURES, OR, WHEN POSSIBLE, TO MITIGATE IMPACT TO THE PREHISTORIC ARCHAEOLOGICAL VALUES IN PREPARATION FOR THE DECKER COAL COMPANY'S STATE AND FEDERAL STRIP MINING PERMITS. THE PROJECT INCLUDED THREE PHASES OF WORK: 1. AN INTENSIVE PEDESTRIAN FIELD SURVEY OF THE STUDY AREA; 2. AN ASSESSMENT OF SITE SIGNIFICANCE AND CONSEQUENT TESTING AND COLLECTION OF THE MATERIALS AT THE SITES; AND 3. LABORATORY EVALUATION AND ANALYSIS.

ON THE APPROXIMATELY 8000 ACRES OF THE PROJECT 21 ARCHAEOLOGICAL SITES WERE RECORDED. THESE WERE CLASSIFED INTO 6 SITE TYPES: 1 STONE CIRCLE SITE, 6 TEMPORARY OR HUNTING CAMPS, 2 DRIVE LINE COMPLEXES, 2 SPECIFIC ACTIVITY SITES, 2 QUARRY-WORKSHOP SITES, AND 5 HUNTING-LOOKOUT STATIONS. THREE SITES COULD NOT BE CLASSIFIED AND 1 WAS CLASSIFIED

AS BOTH A HUNTING-LOOKOUT SITE AND AS A TEMPORARY CAMP. (MFO)

REPORTS AND PUBLICATIONS

LYNN R. FREDLUND. PRELIMINARY REPORT: ARCHAEOLOGICAL SURVEY ON DECKER COAL COMPANY LANDS, BIG HORN COUNTY, MONTANA, JUNE 1975

LYNN R. FREDLUND. ARCHAEOLOGICAL SURVEY ON DECKER COAL COMPANY LANDS, BIG HORN COUNTY, MONTANA, JUNE 1976

LYNN R. FREDLUND. REPORTS OF INVESTIGATIONS NO. 4: ARCHAEOLOGY OF EAST DECKER AND THE NORTH EXTENSION, JUNE 1977 AVAILABLE FROM MONTANA TECH ALUMNI FOUNDATION, MINERAL RESOURCES CENTER, BUTTE, MT 59701

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00001278

INVESTIGATOR(S)

D. ROBINSON

RESEARCH INSTITUTION

NORTHERN CHEYENNE RESEARCH PROJECT, LANDOWNERS ASSN.
LAME DEER, MT 59043 (406)477-6488

PRIMARY SPONSOR

NORTHWEST AREA FOUNDATION / ST. PAUL, MN

PRIMARY FUNDING AMOUNT

40,000

TIME FRAME

JANUARY 1976 TO MARCH 1977

LOCATION

MT / ROSEBUD CO., BIG HORN CO. / NORTHERN CHEYENNE RESERVATION / FORT UNION COAL BASIN

ABSTRACT

TO ESTABLISH A DRY-LAND FARMING DEMONSTRATION PROJECT ON THE NORTHERN CHEYENNE RESERVATION. THE RESERVATION INCLUDES A 437,000 ACRE TRACT WHICH LIES IN THE HEART OF THE FORT UNION COAL BASIN. DEPOSITS OF APPROXIMATELY 8 BILLION TONS OF LOW SULFUR STRIPPABLE COAL LIE ON THEIR LAND. THE COOPERATIVE ESTABLISHED BY THIS GRANT WILL DETERMINE HOW BEST TO USE THIS RESOURCE.

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00001279

PROJECT TITLE

INTEGRATIVE ASSESSMENT OF COAL LEASE AREAS IN THE WESTERN UNITED STATES

PROJECT NUMBER

68-01-4691

INVESTIGATOR(S)

K. J. SHARMA / R. V. STEELE
333 RAVENSWOOD AVE./ MENLO PARK, CA 94025 / (415) 326-6200

RESEARCH INSTITUTION

STANFORD RESEARCH INSTITUTE INTERNATIONAL/, CTR. FOR RESOURCE AND ENVIRONMENTAL SYSTEMS STUDIES /

PRIMARY SPONSOR

U.S. EPA / WASHINGTON,D.C.

TIME FRAME

AUGUST 1977 TO APRIL 1978

LOCATION

WESTERN U.S. / CO / MT / NM / ND / AZ / UT / SD / WY

ABSTRACT

THIS INTEGRATIVE ASSESSMENT OF COAL LEASE AREAS IN THE WESTERN UNITED STATES WILL ACCOMPLISH TWO MAJOR TASKS. FIRST, IT WILL DEVELOP AND IMPLEMENT, ON A TEST BASIS, A METHODOLOGY USEFUL IN EVALUATING THE RELATIVE EFFECTS OF DEVELOPING COAL LANDS IN THE FOLLOWING EIGHT STATES OR PORTIONS THEREOF: COLORADO, MONTANA, NEW MEXICO, NORTH DAKOTA, ARIZONA, UTAH, SOUTH DAKOTA, AND WYOMING. THE METHODOLOGY, WHICH WILL BE SEMIQUANTITATIVE, WILL ADDRESS BOTH THE QUANTITATIVE AND QUALITATIVE ASPECTS OF LEASING COAL LANDS. SUITABLE DATA WILL BE COMPILED. SECOND, THE METHODOLOGY DEVELOPED WILL BE APPLIED TO RANK LEASE TRACTS IN AN AREA TO BE DETERMINED BY THE EPA. THE SIZE OF THIS AREA IS LIKELY TO BE THAT TYPICALLY COVERED BY A REGIONAL ENVIRONMENTAL IMPACT STATEMENT.

00001280

PROJECT TITLE

THE EFFECTS OF VESICULAR-ARBUSCULAR MYCORRHIZAE ON HOST PLANT PHYSIOLOGY: ROLE OF SOIL FUNGI IN HEAVY METAL ACCUMULATION AND SOIL DETOXIFICATION PLUS SOIL MICROFUNGAL RESPONSE TO AQUEOUS EFFLUENT FROM IN SITU OIL SHALE RETORTING

INVESTIGATOR(S)

MARTHA CHRISTENSEN/SHAWN TAPLEY/MICHAEL ALLEN
UNIV. OF WYOMING, DEPT. OF BOTANY / (307)766-2380

RESEARCH INSTITUTION

UNIV. OF WYOMING, RMIEE
BOX 3965, UNIV. STATION / LARAMIE, WY 82071 /(307)766-6760

PRIMARY SPONSOR

SMELTER ENVIRONMENTAL RESEARCH ASSOCIATION

SECONDARY SPONSOR

UNIV. OF WYOMING, RMIEE
ESTHER SMITH

PRIMARY FUNDING AMOUNT

1978 - 9,870

SECONDARY FUNDING AMOUNT(S)

1978 - 15,000

LOCATION

WY/ALBANY CO./ LARAMIE; SOIL SAMPLES FROM NEAR ANACONDA, MT

ABSTRACT

(1) A PURE CULTURE TECHNIQUE, DEVELOPED IN OUR LABORATORY FOR GROWING A HOST PLANT WITH AND WITHOUT ITS NATIVE VA MYCORRHIZAL FUNGI HAS ENABLED US TO QUANTIFY THE EFFECT OF GLOMUS FASCICULATUS ON PLANT HORMONE CONCENTRATIONS (CYTOKININS, AUXINS, ABSCISSIC ACID, GIBBERELLIUS), WATER RELATIONS, AND ROOT AND ABOVE-GROUND BIOMASS IN BOUTELOUA GRACILIS. (2) FUNGI FROM SOILS NEAR A COPPER SMELTER (ANACONDA, MT) HAVE BEEN FOUND TO ACCUMULATE ZINC, CADMIUM, AND COPPER TO LEVELS 100-2000 TIMES GREATER THAN EXPERIMENTS WERE: ZINC, 19,500 PPM; CADMIUM, 7,000 PPM COPPER, 7,143 PPM. SOIL FUNGI MAY HAVE A ROLE IN ECOSYTEM DETOXIFICATION AND/OR REDUCTION IN AMOUNTS OF HEAVY METALS ENTERING VEGETATION IN THE COURSE OF NUTRIENT CYCLING. (3) THE COMMUNITY OF SOIL FUNGI IS ADVERSELY AFFECTED BY APPLICATION OF OIL SHALE RETORT EFFLUENT. THE STUDY OF PRECISE EFFECT ON COMPOSITION AND STRUCTURE IN A COMMUNITY OF DESERT SOIL MICROFUNGI IS JUST BEGINNING.

STUDY AFFILIATION

THIS STUDY IS PART OF 'BIOLOGICAL EFFECTS OF OIL SHALE RETORT EFFLUENT' LARAMIE ENERGY TECH. CENTER

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00001281

PROJECT TITLE

EXTRACTION OF HYDROCARBONS FROM TAR SANDS WITH 'SUPER SOLVENTS'

INVESTIGATOR(S)

ROLAND E. BARDEN/ DONNA KING

RESEARCH INSTITUTION

UNIV. OF WYOMING, RMIEE
BOX 3965, UNIVERSITY STATION/ LARAMIE, WY 82071
(307) 766-6760

PRIMARY SPONSOR

UNIV. OF WYOMING, RMIEE
ESTHER SMITH

PRIMARY FUNDING AMOUNT

1978 - 4,350 (INDUSTRIAL FUND)

TIME FRAME

JANUARY 1978 TO DECEMBER 1979

LOCATION

WY/ ALBANY CO./ TAR SAND SAMPLE FROM NEAR VERNAL, UT

ABSTRACT

THE OBJECTIVE IS TO TEST OIL CONTINUOUS MICROEMULSIONS THAT DO NOT CONTAIN DETERGENTS (SEE: J. COLLOID INTERFACE SCI., 60,488 (1977)) AS SOLVENTS FOR EXTRACTING FOSSIL FUEL FROM TAR SAND. CERTAIN TERNARY SOLUTIONS OF HEXANE, WATER AND 2-PROPANOL AND OF TOLUENE, WATER AND 2-PROPANOL ARE SUFFICENTLY SURFACE ACTIVE TO SUSTAIN A MICROEMULSIFIED SYSTEM. THIS PROJECT WILL TEST WHETHER THE SURFACE ACTIVITY IN THESE SOLVENTS IS SUFFICENT TO DISPLACE FOSSIL FUELS FROM TAR SAND IN AN EFFICIENT MANNER.

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00001282

PROJECT TITLE

MATHEMATICAL MODELS OF HORIZONTAL RETORTING OF OILSHALE

PROJECT NUMBER

TASK AGREEMENT #015, LETC/RMIEE; CONTRACT #ET-77-S-03-1761

INVESTIGATOR(S)

M. G. HARRIS (UNIV. OF WYOMING, DEPT. OF CHEMICAL ENG.)
J. M. GEORGE (UNIV. OF WYOMING, DEPT. OF MATHEMATICS)
(307)766-4221

RESEARCH INSTITUTION

UNIV. OF WYOMING, RMIEE / BOX 3965, UNIV. STATION /
LARAMIE, WY 82071 / (307)766-6760

PRIMARY SPONSOR

U.S. DEPT. OF ENERGY. LARAMIE ENERGY TECH. CENTER
LEROY DOCKTOR / 9TH & LEWIS / LARAMIE. WY 82070

PRIMARY FUNDING AMOUNT
1977 - 95.000 / 1978 - 86.000

TIME FRAME
JANUARY 1977 TO CONTINUING

LOCATION
WY / ALBANY CO. / LARAMIE

ABSTRACT
DEVELOP MATHEMATICAL MODELS OF IN-SITU OILSHALE RETORTING PROJECTS. A MODEL HAS BEEN DEVELOPED FOR THE 150 TON RETORT AT LETC. THIS MODEL HAS BEEN MODIFIED TO INCLUDE HORIZONTAL RETORTING EFFECTS SUCH AS OVERRIDE. AND IS A TWO DIMENSIONAL MODEL OF THE RETORTING PROCESS. GEOGRAPHY. GEOLOGY. AND CLIMATE WHICH MAY INFLUENCE PRECIPITATION CHEMISTRY. PARTICULAR EMPHASIS WILL BE GIVEN TO THE ROLE OF WINDBLOWN DUST (OWING TO WIDESPREAD AGRICULTURAL OPERATIONS) IN NEUTRALIZING ACID PRECIPITATION RESULTING FROM THE COMBUSTION OF FOSSIL FUEL. THE INFLUENCE OF DUSTFALL (PROBABLY CONTAINING AGRICULTURAL FERTILIZER RESIDUES) UPON ATMOSPHERIC INPUTS OF PHOSPHORUS AND NITROGEN TO ECOSYSTEMS WILL ALSO BE INVESTIGATED.

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00001283

PROJECT TITLE
INVESTIGATION ON THE USE OF OPTICAL ACTIVITY OF SHALE OIL IN THE RETORTING OF OILSHALE

PROJECT NUMBER
TASK AGREEMENT #025. LETC/RMIEE: CONTRACT #ET-77-S-03-1761

INVESTIGATOR(S)
R. OWEN ASPLUND / UNIV. OF WYOMING. DEPT. OF CHEMISTRY
(307)766-4360

RESEARCH INSTITUTION
UNIV. OF WYOMING. RMIEE / BOX 3965. UNIV. STATION /
LARAMIE. WY 82071 (307)766-6760

PRIMARY SPONSOR
U.S. DEPT. OF ENERGY, LARAMIE ENERGY TECH. CENTER
DALE LAWLOR / 9TH & LEWIS / LARAMIE. WY 82070

PRIMARY FUNDING AMOUNT
1977 - 5.500 / 1978 - 28.917

TIME FRAME
JANUARY 1977 TO DECEMBER 1978

LOCATION
WY / ALBANY CO.. SWEETWATER CO /

ABSTRACT
SHALE OIL HAS BEEN SHOWN TO BE OPTICALLY ACTIVE. THE PRESENT PROJECT SEEKS TO DETERMINE THE CHEMICAL SOURCE OF THAT ACTIVITY. IT ALSO SEEKS TO ESTABLISH THE USEFULNESS OF OPTICAL ACTIVITY AS A STRUCTURAL AND KINETIC MARKER IN THE RETORTING PROCESS. EXTENSIVE STUDIES ARE UNDERWAY ON THE OPTICAL ROTATIONAL CHARACTERISTICS OF CHIRAL ALKANES AND THESE PROPERTIES CORRELATED TO THOSE OBSERVED IN SHALE OIL.

STUDY AFFILIATION
THIS PROJECT IS RELATED TO'ORD AND DC OF CHIRAL ALKANES' PROJECT NUMBER 00001118. ERIS PROJECTS REPORT. VOLUME 3. NO. 1. AUGUST 1978.

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00001284

PROJECT TITLE
WESTERN TIGHT GAS SANDS - GREATER GREEN RIVER BASIN

PROJECT NUMBER
9410-01907

INVESTIGATOR(S)
C. W. SPENCER

RESEARCH INSTITUTION
U.S. GEOLOGICAL SURVEY. GEOLOGIC DIV.

PRIMARY SPONSOR
U.S. GEOLOGICAL SURVEY. GEOLOGIC DIV.

PRIMARY FUNDING AMOUNT
FY 77 277,000

TIME FRAME
OCTOBER 1976 TO SEPTEMBER 1977

LOCATION
WY / CO / GREEN RIVER

ABSTRACT
THE INCREASING DEMAND FOR NATURAL GAS NECESSITATES AN EARLY CHARACTERIZATION OF THE NATURAL GAS RESOURCE POTENTIAL OF PRESENTLY SUBECONOMIC ACCUMULATIONS OF NATURAL GAS. PRELIMINARY DATA INDICATE MAJOR GAS RESOURCES (POSSIBLY AS MUCH AS 300-600 TCF) MAY BE PRESENT IN TERTIARY AND UPPER CRETACEOUS LOW-PERMEABILITY SANDSTONE RESERVOIRS WITHIN THE GREATER GREEN RIVER BASIN OF WYOMING AND COLORADO. NO SPECIFIC DATA ARE PRESENTLY AVAILABLE TO REASONABLY PREDICT RECOVERABLE RESOURCES. IN ADDITION. MUCH ADDITIONAL PETROGRAPHIC. STRATIGRAPHIC. AND OTHER DATA ARE NEEDED TO GUIDE PRESENT AND FUTURE NATURAL GAS RECOVERY TECHNOLOGY. INITIAL WORK WILL CONCENTRATE ON CORE PROCESSING FOR PALEOENVIRONMENTAL AND RESERVOIR PROPERTIES DATA. REGIONAL WELL LOG CROSS SECTIONS WILL BE CONSTRUCTED. COMPUTER PROCESSING OF WELL HISTORY DATA WILL PROVIDE INFORMATION THAT WILL FACILITATE CONSTRUCTION OF RESERVOIR PRESSURE AND TEMPERATURE MAPS DURING THE CURRENT GEOPHYSICAL WELL LOGS IN ORDER TO DEFINE PARAMETERS FOR ISOPACHING TOTAL VOLUME OF POTENTIALLY GAS PRODUCTIVE SANDSTONE RESERVOIRS ON A REGIONAL BASIS.

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00001285
PROJECT TITLE
LOWER UPPER CRETACEOUS STRATA-STRATIGRAPHY AND PETROLEUM POTENTIAL
PROJECT NUMBER
9410-01874
INVESTIGATOR(S)
E. A. MEREWETHER
RESEARCH INSTITUTION
U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV. / BOX 25046, DENVER FEDERAL CENTER/ DENVER, CO 80225
PRIMARY SPONSOR
U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV.
PRIMARY FUNDING AMOUNT
FY 77 - 58,000
LOCATION
WY / MT / SD / NE / CO / UT / ID
ABSTRACT

THE PROJECT IS A PETROLEUM-RESOURCE INVESTIGATION OF THE RELATION BETWEEN SEDIMENTATION, OROGENY, AND RESERVOIR-DISTRIBUTION, FOR THE LOWER-UPPER CRETACEOUS ROCKS IN WYOMING AND THE ADJACENT STATES. THE INITIAL OBJECTIVE OF THE STUDY IS TO REFINE THE STRATIGRAPHY OF THE FORMATIONS OF CENOMANIAN, TURONIAN, AND CONIACIAN AGE, THROUGH THE USE OF PALEONTOLOGIC AND SUBSURFACE DATA. TONGUES OF SANDSTONE AND UNCONFORMITIES WHICH ARE RECOGNIZED AT OUTCROPS, WILL BE DEFINED IN THE STRUCTURAL BASINS OF THE REGION. SUBSEQUENT OBJECTIVES ARE: (1) THE LOCATION OF POTENTIAL SOURCE-ROCKS AND RESERVOIR BEDS FOR OIL AND GAS, BY THE ANALYSIS OF SAMPLES AND THE PREPARATION OF PALEOGRAPHIC MAPS; (2) THE EVALUATION OF THE PETROLEUM POTENTIAL OF THE BASINS WITH EMPHASIS ON EARLY LATE CRETACEOUS STRATIGRAPHIC TRAPS; (3) THE DESCRIPTION OF THE GEOLOGIC HISTORY AND PETROLEUM RESOURCES OF THE OTHER PARTS OF THE WESTERN INTERIOR, OF BASINS IN ALASKA, AND OF THE CONTINENTAL SHELF OF THE UNITED STATES.

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00001286
PROJECT TITLE
NORTHERN BORDER PIPELINE PROJECT-PART OF THE ALASKA NATURAL GAS TRANSPORTATION SYSTEM (FINAL ENVIRONMENTAL IMPACT STAEMENT)
INVESTIGATOR(S)
EIS TASK FORCE
RESEARCH INSTITUTION
U. S. BUREAU OF LAND MANAGEMENT / ALASKA NATURAL GAS TRANSPORTATION SYSTEM / WASHINGTON, D.C. 20240
PRIMARY SPONSOR
U. S. BUREAU OF LAND MANAGEMENT
STATUS
COMPLETED-DRAFT EIS JULY 1975 / FINAL EIS MARCH 1976
LOCATION
THE PROPOSED ROUTE OF THE NORTHERN BORDER PIPELINE EXTENDS AT A POINT ON THE U.S.-CANADIAN BORDER NEAR MORGAN, MT TO A TERMINUS NEAR DELMONT, PA/ MT / PHILLIPS CO., VALLEY CO., ROOSEVELT CO. / FT. PECK INDIAN RESERVATION
ABSTRACT

A 5,580 MILE BURIED PIPELINE HAS BEEN PROPOSED TO TRANSPORT NATURAL GAS FROM PRUDHOE BAY, ALASKA TO MARKETS IN THE LOWER UNITED STATES. THE NORTHERN BORDER PORTION OF THIS PROJECT WOULD RUN FOR 1,619 MILES FROM THE U.S.-CANADA BORDER, CROSSING MONTANA, NORTH AND SOUTH DAKOTA, MINNESOTA, IOWA, ILLINOIS, INDIANA, OHIO, AND WEST VIRGINIA, TO A TERMINATION POINT NEAR DELMONT, PA. THE PROPOSED SYSTEM WILL CONSIST OF 1,619 MILES OF MAINLINE PIPE UP TO 42 INCHES IN DIAMETER, 12 COMPRESSOR STATION SITES, 13 DELIVERY-MEASURING STATIONS, A COMMUNICATIONS SYSTEM REQUIRING 87 TRANSMISSION/RECEPTION (MICROWAVE) TOWERS, AND 100 MAINLINE BLOCK VALVES. THE THE FINAL EIS DESCRIBES THE PROPOSED ACTION, ANALYZES THE ENVIRONMENTAL IMPACTS, AND COVERS ALTERNATIVES TO THE PROPOSED PIPELINE.

STUDY AFFILIATION
THIS PROJECT IS RELATED TO 'NORTHERN BORDER PIPELINE PROJECT-ENVIRONMENTAL IMPACT ASSESSMENT,' SERIAL NUMBER 0000   , ENERGY RESEARCH INFORMATION SYSTEM, PROJECTS REPORT, VOLUME 3, NO.2, DECEMBER 1978.
REPORTS AND PUBLICATIONS
ALASKA NATURAL GAS TRANSPORTATION SYSTEM-FINAL ENVIRONMENTAL IMPACT STATEMENT, NORTHERN BORDER VOLUME, MARCH 1976, U. S. DEPT. OF THE INTERIOR, WASHINGTON, D.C. 20240. (FOR SALE BY THE SUPERINTENDENT OF DOCUMENTS, U.S. GOVERNMENT PRINTING OFFICE, WASHINGTON, D. C. 20402, $12 FOR ENTIRE EIS, STOCK NO. 024-011-00069-1).

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00001287
PROJECT TITLE
NORTHERN BORDER PIPELINE PROJECT-ENVIRONMENTAL IMPACT ASSESSMENT
INVESTIGATOR(S)
GERRY GALLAGHER
RESEARCH INSTITUTION
ECOLOGY AND ENVIRONMENT, INC. / P.O. BOX D / BUFFALO, NY 14225 / (716) 632-4491

COOPERATOR

NORTHERN BORDER PIPELINE CO. / C/O NORTHERN NATURAL GAS CO. / 2223 DODGE ST. / OMAHA, NE 68102

PRIMARY SPONSOR

NORTHERN BORDER PIPELINE CO.

PRIMARY FUNDING AMOUNT

OVER 2 MILLION ON ALL ENVIRONMENTAL ASSESSMENT WORK

TIME FRAME

SEPTEMBER 1973 TO APRIL 1974

STATUS

COMPLETED MARCH 1974

LOCATION

THE PROPOSED ROUTE OF THE PIPELINE EXTENDS FROM THE CANADIAN BORDER IN EASTERN MONTANA TO A TERMINUS NEAR DELMONT, PA / MT / PHILLIPS CO., VALLEY CO., & ROOSEVELT CO./ FT. PECK INDIAN RESERVATION

ABSTRACT

THE NORTHERN BORDER PIPELINE COMPANY PROPOSES TO CONSTRUCT AND OPERATE A PIPELINE TO DELIVER LARGE VOLUMES OF NATURAL GAS TO A 29 STATE AREA OF THE NORTH CENTRAL AND NORTHEASTERN UNITED STATES. THE NORTHERN BORDER PROJECT IS A LINK IN A PLAN TO TRANSPORT NATURAL GAS FROM THE NORTH SLOPE OF ALASKA, IN THE REGION GENERALLY IDENTIFIED AS PRUDHOE BAY, AND ALSO FROM MACKENZIE RIVER DELTA AREA OF THE NORTHWEST TERRITORIES, CANADA. NORTHERN BORDER PIPELINE CO. IS A PARTNERSHIP COMPRISED OF AFFILIATES OF SIX INTERSTATE NATURAL GAS PIPELINE COMPANIES WHICH PLAN TO TAKE DELIVERY OF THE GAS TO BE SHIPPED TO THE NORTHERN BORDER FACILITIES. THE ENVIRONMENTAL ASSESSMENT DISCUSSES THE PROPOSED ACTION, AND THE ALTERNATIVES TO THE PROPOSED ACTION.

STUDY AFFILIATION

THIS PROJECT IS RELATED TO 'NORTHERN BORDER PIPELINE PROJECT-PART OF THE ALASKA NATURAL GAS TRANSPORTATION SYSTEM (FINAL ENVIRONMENTAL IMPACT STATEMENT)'. SERIAL NUMBER 0000 , ENERGY RESEARCH INFORMATION SYSTEM, VOLUME 3, NO. 2, DECEMBER, 1978.

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00001288

PROJECT TITLE

MINERALOGY OF THE GREEN RIVER FORMATION (OIL SHALE) COLORADO, UTAH AND WYOMING

INVESTIGATOR(S)

C. MILTON / A. PALST

RESEARCH INSTITUTION

GEORGE WASHINGTON, UNIV./ WASHINGTON D.C. / (202)676-7118

COOPERATOR

UNIV. OF CALIFORNIA / BERKELEY, CA

PRIMARY SPONSOR

NATIONAL SCIENCE FOUNDATION / WASHINGTON D.C.

PRIMARY FUNDING AMOUNT

FY76-10,000; FY77-10,000; FY78-10,000

TIME FRAME

1950 TO CONTINUING

ABSTRACT

SINCE 1952 (THEN WITH THE U.S. GEOLOGICAL SURVEY) THE MINERALOGY OF THE GREEN RIVER OIL SHALES OF COLORADO, UTAH, AND WYOMING HAVE BEEN STUDIED, DISCOVERING MANY NEW MINERALS, SOME OF ECONOMIC SIGNIFICANCE, OTHERS SCIENTIFIC. OVER FIFTY CO-WORKERS HAVE COOPERATED ON THIS PROJECT, AND 40 TO 50 PAPERS HAVE BEEN PUBLISHED IN SCIENTIFIC JOURNALS. SINCE 1972 WE HAVE BEEN WORKING CLOSELY WITH PROFESSOR ADOLF PALST IN BERKELEY.

REPORTS AND PUBLICATIONS

MINERALOGLY OF THE GREEN RIVER FORMATION, MINERALOGICAL RECORD, SEPT-OCT, 1977.

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00001289

PROJECT TITLE

INVESTIGATION OF FACILITIES AND ENERGY SUPPLIES IN THE NORTHERN TIER STATES TO AID FEA IN CANADIAN CRUDE OIL ALLOCATIONS

PROJECT NUMBER

CR-05-60593-00 (FEA)

INVESTIGATOR(S)

G. L. SHROFF / J. P. BLONDEAU / J. A. VICEK

RESEARCH INSTITUTION

BONNER AND MOORE ASSOCIATES, INC. / HOUSTON, TX 77002/ (713) 659-1871

PRIMARY SPONSOR

U. S. FEDERAL ENERGY ADMINISTRATION / WASHINGTON, D. C.

PRIMARY FUNDING AMOUNT

99,000

TIME FRAME

FEBRUARY 1976 TO JULY 1976

LOCATION

MT / ND / WY / MI / ID / MN /

ABSTRACT

BONNER AND MOORE CONDUCTED AN EXTENSIVE FACILITIES EVALUATION TO SUPPORT FEA DECISIONS ON ALLOCATING DWINDLING SUPPLIES OF CANADIAN CRUDE OIL. ALL REFINERIES AND PIPELINES SERVING THE SIX-STATE NORTHERN TIER REGION WERE SURVEYED, SOME BY ON-SITE VISITS AND OTHERS BY TELEPHONE INTERVIEWS. DETAILED FACILITY LISTS INCLUDING PROCESS UNITS, TANKAGE, MARINE DOCKS, PIPELINE CONNECTIONS AND RAIL CONNECTIONS WERE COMPILED FOR THE REFINERIES. EACH REFINERY'S ABILITY TO PROCESS ALTERNATE CRUDE OILS WAS ANALYZED AS WELL AS EACH PIPELINE'S CAPACITY AND PROJECTED SPARE CAPACITY FOR DELIVERING NEW CRUDES. THE CAPACITIES AND COSTS OF OTHER TRANSPORTATION MODES SUCH

AS UNIT TRAINS AND BARGES WERE ALSO ESTIMATED. CRUDE OIL PRODUCTION, OWNERSHIP AND INTERSTATE TRANSFER WAS MAPPED FOR THE STATES OF WYOMING, MONTANA, NORTH DAKOTA AND MICHIGAN. WITH SUCH DETAILED DATA, FEA COULD ACCURATELY ACCESS THE IMPACT OF CANADIAN PHASE OUT THROUGH THE END OF 1977.

REPORTS AND PUBLICATIONS

BONNER AND MOORE ASSOC., INC. PETROLEUM SUPPLY ALTERNATIVES FOR THE NORTHERN TIER STATES THROUGH 1977, 4 AUGUST 1976.

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00001290

PROJECT TITLE

PARIS VALLEY FIELD PROJECT

PROJECT NUMBER

E(04-3)-1000

INVESTIGATOR(S)

R. Y. POGONTCHEFF

RESEARCH INSTITUTION

HUSKY OIL CO. / CODY, WY

COOPERATOR

LEIGHTON, A. J. / SAN FRANCISCO OFFICE OF PROGRAM COORDINATION AND MANAGEMENT-FOSSIL ENERGY PROGRAMS

PRIMARY SPONSOR

U. S. ERDA, SAN FRANCISO OPERATIONS OFFICE

PRIMARY FUNDING AMOUNT

FY76-1,131,800; FY77-1,131,800; FY78-1,131,800

TIME FRAME

JANUARY 1975 TO JANUARY 1980

LOCATION

WY

ABSTRACT

THE OBJECTIVE OF THE PROJECT IS TO DEMONSTRATE THE TECHNICAL EFFICIENCY AND ECONOMICS OF PRODUCING PETROLEUM FROM A FORMERLY LOW-PRODUCTIVE PETROLEUM RESERVOIR USING THE COMBINATION THERMAL DRIVE (IN SITU COMBUSTION UTILIZING CONTROLLED WATER INJECTION) IN CONJUNCTION WITH SHORT-TERM THERMAL STIMULATIONS OF PRODUCTION WELLS. OIL PRODUCTION DURING THE QUARTER INCREASED SUBSTANTIALLY TO AN AVERAGE OF 133 BOPD COMPARED TO 66 BOPD FOR THE PREVIOUS QUARTER. PRODUCTION RATES AVERAGED ABOUT 159 BOPD IN OCTOBER AND DECEMBER, AND NEARLY 100 BOPD IN NOVEMBER. WATER PRODUCTION ALSO INCREASED 940 BWPD FROM 492 BWPD. THE INCREASE IN WATER PRODUCTION WAS MAINLY DUE TO INCREASED PUMPING SPEEDS REQUIRED TO REDUCE FLUID LEVELS. THE PRODUCING WELLS HAVE HAD VARYING AMOUNTS OF RESPONSE TO STEAM STIMULATION. WELLS 4-2, 20-2, AND 21-2 HAVE RESPONDED FAVORABLY WITH PEAK RATES CLOSE TO 100 BOPD AND AVERAGE RATES OF 30 TO 60 BOPD 2 TO 3 WEEKS AFTER STEAMING. WELLS 3-2 AND 14-2 HAVE ALSO SHOWED GOOD RESPONSE TO STEAMING. HOWEVER, PRODUCTION IN THE AFOREMENTIONED WELLS FALLS OFF RAPIDLY REQUIRING MORE FREQUENT STIMULATIONS. SUBSEQUENT STEAM JOBS WILL HAVE INCREASED HEAT INPUT. WELL 11-2 RESPONDED TO STEAMING AFTER SOME REMEDIAL WORK. HOWEVER, WELLS 10-2,17-2 AND 22-2 SHOWED POOR RESPONSES TO STEAM STIMULATION. WELL 19-2 HAS NOT RESPONDED AS WELL AS IN THE PAST, POSSIBLY BECAUSE A HIGH PERMEABILITY CHANNEL MAY BE DEVELOPING TOWARD WELL 4-2. THE RESULTING STEAM MOVEMENT APPEARS TO BE ENHANCING PRODUCTION FROM THE LATTER WELL. PRODUCTION AND OTHER PERTINENT DATA FOR THE PRODUCING WELLS ARE GIVEN.

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00001291

PROJECT TITLE

COMPUTER APPLICATIONS TO RESOURCE APPRAISAL AND MINERALOGY OF OIL SHALE AND OTHER ORGANIC RICH SEDIMENTS, WESTERN U.S.

PROJECT NUMBER

9430-01410

INVESTIGATOR(S)

J. K. PITMAN

RESEARCH INSTITUTION

U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV. / BOX 25046 / DENVER FEDERAL CENTER / DENVER, CO 80225

PRIMARY SPONSOR

U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV. / 12201 SUNRISE VALLEY DR. / RESTON, VA 22092

TIME FRAME

OCTOBER 1976 TO SEPTEMBER 1978

LOCATION

CO / UT / WY

ABSTRACT

THE OIL SHALE FISCHER ASSAY AND SALINE MINERAL DATA STORAGE AND RETRIEVAL SYSTEM IS DESIGNED TO GENERATE OIL YIELD, THICKNESS, RESOURCE ANB MINERALOGICAL INFORMATION FOR OIL SHALE DEPOSITS IN COLORADO, UTAH AND WYOMING. THE DATA IS WIDELY USED FOR EVALUATING TRACTS OF LAND UNDER LITIGATION, POTENTIAL LAND EXCHANGES, VARIOUS EXTRACTION METHODS, AND FOR CONDUCTING DETAILED GEOLOGIC INVESTIGATIONS IN COLORADO, UTAH AND WYOMING.

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00001292

PROJECT TITLE

A STUDY OF CRUDE OIL SUPPLY AND DEMAND IN THE SERVICE AREA OF THE PROPOSED NORTHERN TIER PIPELINE

INVESTIGATOR(S)

KEITH J. KOVACS / THOMAS J. MANNING / JOHN VAN NEST / PETER J. KILLEN

RESEARCH INSTITUTION

THE PACE COMPANY CONSULTANTS AND ENGINEERS, INC.
5251 WESTHEIMER / P.O. BOX 53473 / HOUSTON, TX 77052

COOPERATOR

BUTLER ASSOC., INC. / NORTHERN TIER PIPELINE CO.

PRIMARY SPONSOR

NORTHERN TIER PIPELINE CO.

PRIMARY FUNDING AMOUNT

PROPRIETARY

TIME FRAME

JUNE 1978 TO SEPTEMBER 1978

LOCATION

WA / ID / MT / ND / MN / WI / MI / IL / OH / PA / NY / IN

ABSTRACT

THE PURPOSE OF THIS STUDY WAS TO ANALYZE THE CRUDE OIL SUPPL AND DEMAND IN THE SERVICE AREA OF THE PROPOSED NORTHERN TIER PIPELINE. SPECIAL ATTENTION WAS GIVEN TO THE MAJOR FACTORS AFFECTING THE POTENTIAL DEMAND FOR SHIPMENTS OF CRUDE OIL VIA THE NORTHERN TIER PIPELINE DURING THE PERIOD 1980 TO 2000, INCLUDING: 1) FUTURE CRUDE OIL SUPPLY AND DEMAND IN THE NORTHERN TIER SERVICE AREA; 2) CRUDE OIL TYPES REQUIRED TO REPLACE THE CANADIAN CURTAILMENT IN THE SERVICE AREA: 3) THE CURRENT AND FUTURE POTENTIAL OF ALASKAN NORTH SLOPE CRUDE OIL USAGE ON A REFINERY-BY-REFINERY BASIS IN THE SERVICE AREA; 4) THE PHYSICAL CAPABILITY OF EXISTING AND PROPOSED SYSTEMS TO SUPPLY NORTHERN TIER'S MARKET AREA.

THE PACE FORECAST FOR THE NORTHERN TIER PIPELINE VOLUME POTENTIAL ASSUMED THAT THE TOTAL DELIVERED COST FOR THE SAME TYPES OF CRUDE OILS VIA THE PIPELINE WAS EQUAL TO OR LOWER THAN ALTERNATIVE MEANS. THE SCOPE OF THIS STUDY SPECIFICALLY EXCLUDED TARIFF AND TRANSPORTATION COST COMPARISONS WITH ALTERNATIVE SYSTEMS OF PROPOSALS.

REPORTS AND PUBLICATIONS

CRUDE OIL SUPPLY/DEMAND OUTLOOK FOR THE NORTHERN TIER AND MIDWEST STATES. PREPARED FOR BUTLER ASSOCIATES, INC. AND THE NORTHERN TIER PIPELINE CO., BY THE PACE COMPANY CONSULTANTS AND ENGINEERS, SEPTEMBER 1978.

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00001293

PROJECT TITLE

PROPOSED OIL AND GAS LEASING IN THE CRAZY MOUNTAINS - ENVIRONMENTAL ANALYSIS REPORT

INVESTIGATOR(S)

LEWIS E. HAWKES (GALLATIN NAT'L FOREST) / KENNETH D. WEYERS (LEWIS & CLARK NAT'L FOREST)

RESEARCH INSTITUTION

U.S. FOREST SERVICE, GALLATIN NATIONAL FOREST / P.O. BOX 130 / BOZEMAN, MT 59715

COOPERATOR

U.S. FOREST SERVICE, LEWIS & CLARK NATIONAL FOREST / P.O. BOX 871 / GREAT FALLS, MT 59401

PRIMARY SPONSOR

U.S. FOREST SERVICE

PRIMARY FUNDING AMOUNT

10,000

TIME FRAME

MARCH 1974 TO FEBRUARY 1978

LOCATION

MT / PARK CO., SWEET GRASS CO., MEAGHER CO. / THE CRAZY MOUNTAINS LEASE WITHIN SECTIONS OF THE GALLATIN AND LEWIS & CLARK NATIONAL FORESTS.

ABSTRACT

THE ENVIRONMENTAL ANALYSIS REPORT DEALS WITH APPLICATIONS TO LEASE NATIONAL FOREST LAND IN THE CRAZY MOUNTAINS FOR OIL AND GAS EXPLORATION AND DEVELOPMENT. THREE COMPANIES HAVE APPLIED FOR LEASES ON APPROXIMATELY 81,500 ACRES OF LAND.

THE POTENTIAL ENVIRONMENTAL IMPACTS WHICH COULD RESULT FROM OIL AND GAS DEVELOPMENT IN THIS AREA ARE EXPLORED IN THE ENVIRONMENTAL ANALYSIS. THIS ENVIRONMENTAL ANALYSIS RECOMMENDS THAT SOME NO-SURFACE OCCUPANCY LEASES BE GRANTED, WITH THE REMAINDER TO BE HELD IN ABEYANCE UNTIL A LAND MANAGEMENT PLAN AND ENVIRONMENTAL IMPACT STATEMENT ARE COMPLETED.

STUDY AFFILIATION

PROPOSED OIL AND GAS LEASING IN THE CRAZY MOUNTAINS - FINAL ENVIRONMENTAL ANALYSIS REPORT, GALLATIN NATIONAL FOREST AND LEWIS AND CLARK NATIONAL FOREST, FEBRUARY 1978.

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00001294

PROJECT TITLE

A STUDY OF UPPER MIDWEST CRUDE OIL SUPPLIES

INVESTIGATOR(S)

MICHAEL J. MURPHY

RESEARCH INSTITUTION

UPPER MIDWEST COUNCIL / 250 MARQUETTE AVE. / MINNEAPOLIS, MN 55480 (612)373-3724

PRIMARY SPONSOR

UPPER MIDWEST COUNCIL

PRIMARY FUNDING AMOUNT

7,500

TIME FRAME

JUNE 1978 TO OCTOBER 1978

STATUS

COMPLETED OCTOBER 1978

LOCATION

MT / ND / SD / MN / WI

ABSTRACT

THIS STUDY EXAMINED REGIONAL CRUDE OIL SUPPLY AND DEMAND

CONDITIONS IN THE UPPER MIDWEST THROUGH 1982 AND CONCLUDED THAT WITHOUT IMPLEMENTATION OF A COMBINATION OF ALTERNATIVE SUPPLY SYSTEMS TO SUPPLY THE EIGHT REFINERS IN THE FOUR STATES (MT, ND, MN AND WI), THERE WILL BE INSUFFICIENT SUPPLIES OF CRUDE AVAILABLE IN THE NEXT FEW YEARS. THE STUDY LOOKED AT THE RANGE OF ALTERNATIVE SUPPLY SYSTEMS POTENTIALLY AVAILABLE TO SOME OR ALL OF THE REFINERIES, AND EXAMINED THE TIMING, THE COMPARATIVE COSTS AND BENEFITS AND KEY DECISION POINTS OF THESE ALTERNATIVES. ALSO EXAMINED WERE THE IMPLICATIONS FOR THE UPPER MIDWEST OF A GROWING SURPLUS OF ALASKAN CRUDE OIL ON THE WEST COAST OF THE U.S. IN TERMS OF NATIONAL DECISIONS AND HOW THEY MIGHT AFFECT THIS REGION.

REPORTS AND PUBLICATIONS

MURPHY, MICHAEL J., UPPER MIDWEST CRUDE OIL SUPPLIES: PROBLEMS AND ALTERNATIVES. A FUTURE CHOICES PUBLICATION OF THE UPPER MIDWEST COUNCIL, OCTOBER, 1978.

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00001295

PROJECT TITLE

WESTERN GAS SANDS PROJECT

INVESTIGATOR(S)

CHARLES H. ATKINSON

RESEARCH INSTITUTION

U.S. DEPT. OF ENERGY / P.O. BOX 14100 / LAS VEGAS, NV 89114 (702)734-3424

COOPERATOR

U.S. DEPT. OF ENERGY, BARTLESVILLE ENERGY TECH. CENTER / U.S. DEPT. OF ENERGY, LAWRENCE LIVERMORE LAB. / U.S. DEPT OF ENERGY, LOS ALAMOS SCIENTIFIC LAB. / U.S. DEPT. OF ENERGY, SANDIA LABS / U.S. GEOLOGICAL SURVEY / CER CORP., LAS VEGAS, NV

PRIMARY SPONSOR

U.S. DEPT. OF ENERGY

SECONDARY SPONSOR

GAS RESEARCH INST.

PRIMARY FUNDING AMOUNT

130,000,000 (ESTIMATED)

SECONDARY FUNDING AMOUNT(S)

700,000

TIME FRAME

JUNE 1977 TO 1985

LOCATION

WESTERN U.S. / MT / WY / SD / ND / NORTHERN GREAT PLAINS PROVINCE / WILLISTON BASIN

ABSTRACT

THE U.S. DEPT. OF ENERGY'S WESTERN GAS SANDS PROJECT IS DIRECTED TOWARD DEVELOPING SIGNIFICANT ADDITIONAL SOURCES OF NATURAL GAS IN THE UNITED STATES. MUCH OF THE POTENTIAL NATURAL GAS RESOURCE LIES WITHIN LOW-PERMEABILITY RESERVOIRS IN A NUMBER OF GEOLOGIC BASINS SCATTERED THROUGHOUT THE WESTERN STATES. THE PURPOSE OF THIS PROJECT IS TO ENCOURAGE AND SUPPLEMENT INDUSTRIAL EFFORTS IN DEVELOPING TECHNOLOGY AND DEMONSTRATING ECONOMICAL FEASIBILITY OF PRODUCING NATURAL GAS FROM THESE RESERVOIRS. THE PROJECT OBJECTIVES ARE AS FOLLOWS: A) DEVELOP A METHOD TO ACCURATELY DETERMINE THE EXTENT AND PHYSICAL PROPERTIES OF THE TIGHT GAS-BEARING FORMATIONS IN THE WESTERN AREAS; B) CONDUCT A COMPREHENSIVE ASSESSMENT OF THE NATURAL GAS RESOURCE IN THE PROJECT STUDY AREAS; C) DEVELOP A DETAILED UNDERSTANDING OF STIMULATION PHENOMENA IN LOW-PERMEABILITY RESERVOIRS; D) IMPROVE PRODUCTION STIMULATION TECHNOLOGY IN LOW-PERMEABILITY RESERVOIRS; E) ENCOURAGE PRIVATE INDUSTRY TO DEVELOP THE GAS RESOURCE. THE PRINCIPAL ACTIVITIES THAT COMPRISE THIS PROJECT ARE: A) RESOURCE ASSESSMENT; B) LABORATORY RESEARCH AND DEVELOPMENT ; C) FIELD RESEARCH, DEVELOPMENT AND DEMONSTRATION.

(THE UPPER CRETACEOUS MARINE TIGHT SANDS HAVE PRODUCED GAS FROM TWO FIELDS IN MONTANA -- BOWDOIN AND CEDAR CREEK IN NORTH-CENTRAL AND EASTERN MONTANA, RESPECTIVELY.)

REPORTS AND PUBLICATIONS

HUNDREDS OF PUBLICATIONS ARE IN EXISTENCE. CONTACT PRINCIPAL INVESTIGATOR FOR A LIST OF PUBLICATIONS.

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00001296

PROJECT TITLE

NORTHERN TIER PIPELINE ENVIRONMENTAL IMPACT STATEMENT -- SOCIOECONOMIC RESOURCES STUDY

INVESTIGATOR(S)

DWAYNE H. JELINEK

RESEARCH INSTITUTION

MOUNTAIN WEST RESEARCH, INC. / 512 N. 29TH ST. / BILLINGS, MT 59101 / (406)259-8982

PRIMARY SPONSOR

MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION LARRY NORDELL / 32 S. EWING / HELENA, MT 59601

PRIMARY FUNDING AMOUNT

77,549 (FROM NORTHERN TIER PIPELINE CO. APPLICATION FEE)

TIME FRAME

NOVEMBER 1978 TO AUGUST 1979

LOCATION

MT / THREE ROUTES ARE BEING DISCUSSED FOR THE MONTANA PORTION OF THE PIPELINE COVERING APPROXIMATELY 624 MILES WITHIN MONTANA.

ABSTRACT

THIS PROJECT WILL INVESTIGATE THE SOCIOECONOMIC RESOURCE FOR THE PURPOSE OF IDENTIFYING AND RANKING POSSIBLE ROUTES FOR THE PROPOSED NORTHERN TIER PIPELINE, AND SHALL INVESTIGATE THE POTENTIAL IMPACTS OF SAID PIPELINE ON THE SOCIOECONOMIC ENVIRONMENT.

THE STUDY WILL INCLUDE: 1) PREPARATION OF A LIST OF CRITERIA BY WHICH THE SOCIOECONOMIC RESOURCES WITHIN THE STUDY CORRIDORS MAY BE RATED IN TERMS OF IMPACT RISK AND WHICH WILL SERVE AS MAPPING UNITS FOR THE CORRIDOR LEVEL INVENTORY; 2) PREPARATION OF MAPS SHOWING THE CATEGORIES DESCRIBED ABOVE; 3) A RANKING OF ALTERNATIVE CENTERLINES AS TO THEIR RELATIVE IMPACT RISK TO THE SOCIOECONOMIC ENVIRONMENT; AND, 4) AN EVALUATION OF POSSIBLE MITIGATING MEASURES WHICH COULD PREVENT OR REDUCE THE POTENTIAL IMPACT ON THE SOCIOECONOMIC ENVIRONMENT.

IN CONJUNCTION WITH THE SOCIOECONOMIC RESOURCE STUDY, A PUBLIC ATTITUDE ASSESSMENT PROGRAM WILL BE CARRIED OUT. THE OBJECTIVES OF THIS PROGRAM ARE TO: 1) PROVIDE A SAMPLE OF OPINION LEADERS AND LOCAL DECISION MAKERS, IN EACH OF THE COUNTIES TRAVERSED BY ALTERNATIVE CORRIDORS FOR THE PROPOSED PIPELINE, WITH THE OPPORTUNITY TO EXPRESS THEIR CONCERNS AND OPINIONS REGARDING THE PROJECT; 2) IDENTIFY IN MORE DEPTH THE ISSUES AND CONCERNS REGARDING POTENTIAL PIPELINE IMPACTS OF CITIZENS IN THOSE COUNTIES AND COMMUNITIES LIKELY TO BE SIGNIFICANTLY AFFECTED BY THE PROJECT; 3) RELATE THOSE LOCALLY-EXPRESSED ISSUES AND CONCERNS TO APPROPRIATE COMPONENTS OF THE IMPACT ASSESSMENT PROCESS AND TO APPLY THEM, WHERE POSSIBLE, TO THE DESIGN OF MITIGATION MEASURES; AND 4) PREPARE A REPORT WHICH DETAILS THE RESULTS OF THE ATTITUDE ASSESSMENT PROGRAM AND IDENTIFYING RELEVANT IMPLICATION IN THE CORRIDOR SELECTION PROCESS.

STUDY AFFILIATION

THIS IS A SUBPROJECT OF 'NORTHERN TIER PIPELINE PROJECT (ENVIRONMENTAL IMPACT STATEMENT - STATE)', PROJECT NUMBER 00001114, ENERGY RESEARCH INFORMATION SYSTEM PROJECTS REPORT, VOLUME 3, NO.1 AUGUST 1978.

REPORTS AND PUBLICATIONS

FINAL REPORT DUE TO DNRC MARCH 1979.

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00001297

PROJECT TITLE

NORTHERN TIER PIPELINE ENVIRONMENTAL IMPACT STATEMENT -- SEISMIC STUDIES

INVESTIGATOR(S)

DR. ANTHONY QAMAR / MICHAEL STICKNEY

RESEARCH INSTITUTION

UNIV. OF MONTANA, DEPT. OF GEOLOGY / MISSOULA, MT 59801 (406)243-6560

PRIMARY SPONSOR

MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION
RAY BREUNINGER / 32 S. EWING / HELENA, MT 59601

PRIMARY FUNDING AMOUNT

7,477 (FROM NORTHERN TIER PIPELINE CO. APPLICATION FEE)

TIME FRAME

SEPTEMBER 1978 TO AUGUST 1979

LOCATION

MT / THREE ROUTES ARE BEING DISCUSSED FOR THE MONTANA PORTION OF THE PIPELINE, COVERING APPROXIMATELY 624 MILES WITHIN MONTANA.

ABSTRACT

THIS PROJECT IS AN INVESTIGATION OF THE SEISMIC HAZARDS OF CERTAIN STUDY CORRIDORS IN MONTANA, FOR THE PURPOSE OF IDENTIFYING AND RANKING POSSIBLE ROUTES FOR THE PROPOSED NORTHERN TIER PIPELINE. THE STUDY WILL INCLUDE: A) PREPARATION OF A LIST OF CRITERIA BY WHICH SEISMIC HAZARDS MAY BE EVALUATED AND RANKED IN TERMS OF IMPACT RISK TO THE PIPELINE AND ASSOCIATED FACILITIES. THE CRITERIA WILL INCLUDE MEASURES OF RECENT SEISMICITY, EPICENTERS OF HISTORIC EARTHQUAKES, AND PREDICTIONS OF EARTHQUAKE PROBABILITIES AND EXPECTED GROUND MOTION PARAMETERS. B) PREPARATION OF MAPS SHOWING EPICENTERS OF HISTORICAL EARTHQUAKES, AREAS OF RECENT SEISMICITY (INCLUDING ACTIVE AND PROBABLY ACTIVE FAULTS), AND OTHER SEISMIC CONCERNS. C) A COMPARISON OF ALTERNATIVE CENTERLINES RANKED AS TO THEIR RELATIVE SEISMIC RISK. D) AN ANALYSIS OF THE SEISMIC HAZARDS TO THE PROPOSED PIPELINE AND ASSOCIATED FACILITIES.

THIS STUDY WILL BE CLOSELY COORDINATED WITH THE OTHER COMPONENTS OF THE NORTHERN TIER STUDY, PARTICULARLY THE ENGINEERING, AQUATIC RESOURCE, GROUNDWATER, FLOODPLAIN, AND GEOLOGIC HAZARD STUDIES.

STUDY AFFILIATION

THIS IS A SUBPROJECT OF 'NORTHERN TIER PIPELINE PROJECT (ENVIRONMENTAL IMPACT STATEMENT-STATE)', PROJECT NUMBER 00001114, ENERGY RESEARCH INFORMATION SYSTEM PROJECTS REPORT, VOLUME 3, NO. 1, AUGUST 1978.

REPORTS AND PUBLICATIONS

FINAL REPORT WILL BE SUBMITTED TO DNRC BY MARCH 1979.

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00001298

PROJECT TITLE

NORTHERN TIER PIPELINE ENVIRONMENTAL IMPACT STATEMENT -- CULTURAL RESOURCES STUDY

INVESTIGATOR(S)

DEE C. TAYLOR

RESEARCH INSTITUTION

UNIV. OF MONTANA, DEPT. OF ANTHROPOLOGY / MISSOULA, MT 59801 (406)243-5921

PRIMARY SPONSOR

MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION
DAVID JANIS / 32 S. EWING / HELENA, MT 59601

PRIMARY FUNDING AMOUNT

5,971 (FROM NORTHERN TIER PIPELINE CO. APPLICATION FEE)

TIME FRAME

JANUARY 1979 TO AUGUST 1979

LOCATION

THREE ROUTES ARE BEING DISCUSSED FOR THE MONTANA PORTION OF THE PIPELINE. COVERING APPROXIMATELY 624 MILES IN MONTANA.

ABSTRACT

THIS PROJECT WILL PERFORM THE CULTURAL RESOURCES STUDY FOR THE PURPOSE OF IDENTIFYING AND RANKING POSSIBLE ROUTES FOR THE PROPOSED NORTHERN TIER PIPELINE. AND WILL INVESTIGATE THE IMPACT OF SAID PIPELINE ON THE CULTURAL RESOURCES. THE STUDY WILL CONSIST OF: 1) PREPARATION OF A LIST OF CRITERIA BY WHICH THE CULTURAL RESOURCES (HISTORICAL AND ARCHAEOLOGICAL SITES) WITHIN THE STUDY CORRIDORS MAY BE RATED IN TERMS OF IMPACT RISK. 2) PREPARATION OF MAPS SHOWING THE CULTURAL RESOURCE CATEGORIES WITHIN THE STUDY CORRIDORS. 3) ALTERNATIVE CENTERLINES WILL BE RANKED AS TO THEIR RELATIVE IMPACT RISK TO THE CULTURAL RESOURCES. 4) A DETAILED ANALYSIS WILL BE MADE OF THE POSSIBLE MITIGATING MEASURES WHICH COULD PREVENT OR REDUCE THOSE POTENTIAL IMPACTS ON THE CULTURAL RESOURCES.

STUDY AFFILIATION

THIS IS A SUBPROJECT OF 'NORTHERN TIER PIPELINE PROJECT (ENVIRONMENTAL IMPACT STATEMENT-STATE)', PROJECT NUMBER 00001114. ENERGY RESEARCH INFORMATION SYSTEM PROJECTS REPORT, VOLUME 3. NO. 1. AUGUST 1978.

REPORTS AND PUBLICATIONS

FINAL REPORT WILL BE SUBMITTED TO DNRC BY MARCH 1979.

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00001299

PROJECT TITLE

NORTHERN TIER PIPELINE ENVIRONMENTAL IMPACT STATEMENT -- AQUATIC RESOURCES STUDY

INVESTIGATOR(S)

NORMAN PETERSON

RESEARCH INSTITUTION

MONTANA DEPT. OF FISH AND GAME
1420 E. 6TH AVE. / HELENA. MT 59601 (406)449-3815

COOPERATOR

FRED ROBINSON / 2807 SUNNYVIEW / BILLINGS. MT
OLSON-ELLIOTT & ASSOCIATES / HELENA. MT 59601

PRIMARY SPONSOR

MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION
LARRY THOMPSON / 32 S. EWING / HELENA. MT 59601

PRIMARY FUNDING AMOUNT

24.000 (FROM NORTHERN TIER PIPELINE CO. APPLICATION FEE)

TIME FRAME

OCTOBER 1978 TO AUGUST 1979

LOCATION

MT / THREE ROUTES ARE BEING DISCUSSED FOR THE MONTANA PORTION OF THE PIPELINE COVERING APPROXIMATELY 624 MILES IN MONTANA.

ABSTRACT

THIS PROJECT IS AN INVESTIGATION OF THE AQUATIC RESOURCES OF CERTAIN STUDY CORRIDORS IN MONTANA. FOR THE PURPOSE OF IDENTIFYING AND RANKING POSSIBLE ROUTES FOR THE PROPOSED NORTHERN TIER PIPELINE. THIS STUDY WILL INCLUDE: 1) PREPARATION OF A LIST OF CRITERIA BY WHICH STREAMS WITHIN THE STUDY CORRIDORS MAY BE RATED IN TERMS OF IMPACT RISK TO AQUATIC LIFE AND HABITATS; 2) PREPARATION OF MAPS SHOWING THE LOCATIONS AND RATINGS OF SURFACE WATERS WITHIN 10 KM DOWNSTREAM OF THE STUDY CORRIDORS; 3) WRITTEN DESCRIPTIONS OF AQUATIC BIOTA (BOTH FLORA AND FAUNA) WITHIN THE STUDY CORRIDORS SUITABLE FOR INCLUSION IN THE DRAFT EIS; 4) RANKING OF ALTERNATIVE CENTERLINES AS TO THEIR RELATIVE IMPACT RISK TO AQUATIC LIFE AND HABITATS; AND 5) A DESCRIPTION OF POTENTIAL IMPACTS OF THE PROPOSED PIPELINE AND ASSOCIATED FACILITIES UPON WATER QUALITY AND UPON AQUATIC LIFE AND HABITATS. RELATED TO SPECIFIC AREAS WITHIN THE STUDY CORRIDORS. IN ADDITION. THE IMPACT OF A CRUDE OIL SPILL ON A STREAM ECOSYSTEM WILL BE STUDIED.

STUDY AFFILIATION

THIS IS A SUBPROJECT OF 'NORTHERN TIER PIPELINE PROJECT (ENVIRONMENTAL IMPACT STATEMENT-STATE)', PROJECT NUMBER 00001114. ENERGY RESEARCH INFORMATION SYSTEM PROJECTS REPORT, VOLUME 3. NO. 1 AUGUST 1978.

REPORTS AND PUBLICATIONS

FINAL REPORT TO DNRC DUE MARCH 1979

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00001300

PROJECT TITLE

NORTHERN TIER PIPELINE ENVIRONMENTAL IMPACT STATEMENT -- ENGINEERING STUDY

INVESTIGATOR(S)

JACK CRANK

RESEARCH INSTITUTION

GULF INTERSTATE ENGINEERING CO. / P.O. BOX 1916 /

COOPERATOR

THOMAS J. WING / 2301 COLONIAL DR. / HELENA. MT 59601

PRIMARY SPONSOR

MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION
RAY BREUNINGER / 32 S. EWING / HELENA. MT 59601

PRIMARY FUNDING AMOUNT

35.000 (FROM NORTHERN TIER PIPELINE CO. APPLICATION FEE)

TIME FRAME

DECEMBER 1978 TO FEBRUARY 1979

LOCATION

MT / THREE ROUTES ARE BEING DISCUSSED FOR THE MONTANA PORTION OF THE PIPELINE COVERING APPROXIMATELY 624 MILES WITHIN MONTANA

ABSTRACT

THIS PROJECT CONSISTS OF AN INVESTIGATION OF THE ENGINEERING CONCERNS RELATED TO PIPELINE SYSTEM DESIGN. CONSTRUCTION. AND OPERATION. FOR CERTAIN STUDY CORRIDORS IN MONTANA. FOR

THE PURPOSE OF IDENTIFYING AND RANKING POSSIBLE ROUTES FOR THE PROPOSED NORTHERN TIER PIPELINE. THIS STUDY WILL INCLUDE FIELD RECONNAISSANCE TO EXAMINE THE PROPOSED LOCATION OF THE PIPELINE AND ITS SYSTEM COMPONENTS, SUCH AS RIVER AND STREAM CROSSINGS, MAIN LINE BLOCK VALVES, PUMP STATIONS, MICROWAVE STATIONS, CATHODIC PROTECTION FACILITIES, HIGHWAY AND ROAD CROSSINGS, AND POWERLINE AND OTHER EXISTING UTILITY RIGHTS-OF-WAY. THIS INVESTIGATION WILL ALSO INCLUDE A REVIEW OF SPILL CONTAINMENT PLANS, CONSTRUCTION GUIDELINES, EROSION CONTROL MEASURES, QUALITY CONTROL PROGRAMS AND RECLAMATION PLANS TO ENSURE INCLUSION OF ADEQUATE PROCEDURES TO PROTECT THE ENVIRONMENT AND MITIGATE, TO THE MAXIMUM EXTENT PRACTICABLE, ADVERSE ENVIRONMENTAL IMPACTS.

STUDY AFFILIATION

THIS IS A SUBPROJECT OF 'NORTHERN TIER PIPELINE PROJECT (ENVIRONMENTAL IMPACT STATEMENT - STATE)', PROJECT NUMBER 00001114, ENERGY RESEARCH INFORMATION SYSTEM PROJECTS REPORT VOLUME 3, NO. 1 AUGUST 1978.
HOUSTON, TX 77001

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00001301

PROJECT TITLE

NORTHERN TIER PIPELINE ENVIRONMENTAL IMPACT STATEMENT -- CLIMATE AND AIR QUALITY STUDY

INVESTIGATOR(S)

DAN DOLENC

RESEARCH INSTITUTION

MONTANA ENERGY & MHD RESEARCH & DEVELOPMENT INST.
P.O. BOX 3909 / BUTTE, MT 59701 (406)494-6100

PRIMARY SPONSOR

MONTANA DEPT. OF NATURAL RESOURCE & CONSERVATION
DAVID JANIS / 32 S. EWING / HELENA, MT 59601

PRIMARY FUNDING AMOUNT

32,000 (FROM NORTHERN TIER PIPELINE APPLICATION FEE)

TIME FRAME

OCTOBER 1978 TO AUGUST 1978

LOCATION

MT / THREE ROUTES ARE BEING DISCUSSED FOR THE MONTANA PORTION OF THE PIPELINE, COVERING APPROXIMATELY 624 MILES WITHIN MONTANA

ABSTRACT

THIS PROJECT IS AN INVESTIGATION OF THE CLIMATE AND AIR QUALITY RESOURCES OF CETRAIN STUDY CORRIDORS IN MONTANA, FOR THE PURPOSE OF IDENTIFYING AND RANKING POSSIBLE ROUTES FOR THE PROPOSED NORTHERN TIER PIPELINE, AND SHALL INVESTIGATE THE POTENTIAL IMPACTS OF SAID PIPELINE ON AIR QUALITY. THE STUDY WILL INCLUDE 1) PREPARATION OF A LIST OF CRITERIA BY WHICH THE AIR QUALITY WITHIN THE STUDY CORRIDORS MAY BE RATED IN TERMS OF IMPACT RISK AND WHICH WILL SERVE AS MAPPING UNITS FOR THE CORRIDOR LEVEL INVENTORY; 2) PREPARATION OF MAPS SHOWING CLIMATE AND AIR QUALITY CATEGORIES; 3) A RANKING OF ALTERNATIVE CENTERLINES AS TO THEIR RELATIVE RISK TO THE CLIMATE AND AIR QUALITY; AND, 4) A DETAILED ANALYSIS OF POTENTIAL IMPACTS OF THE PROPOSED PIPELINE AND ASSOCIATED FACILITIES ON THE AIR QUALITY WITHIN THE STUDY CORRIDORS.

STUDY AFFILIATION

THIS IS A SUBPROJECT OF 'NORTHERN TIER PIPELINE PROJECT (ENVIRONMENTAL IMPACT STATEMENT-STATE)', PROJECT NUMBER 00001114, ENERGY RESEARCH INFORMATION SYSTEM PROJECTS REPORT, VOLUME 3, NO.1, AUGUST 1978.

REPORTS AND PUBLICATIONS

FINAL REPORT DUE TO DNRC MARCH 1979.

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00001302

PROJECT TITLE

NORTHERN TIER PIPELINE ENVIRONMENTAL IMPACT STATEMENT-GEOTECHNIC, FLOODPLAIN AND HYDROLOGICAL STUDIES

INVESTIGATOR(S)

JOHN H. MORRISON, JR.

RESEARCH INSTITUTION

MORRISON-MAIERLE, INC. / CONSULTING ENGINEERS / 910 HELENA AVENUE / HELENA, MT 59601 / (406) 442-3050

PRIMARY SPONSOR

MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION /
RAY BREUNINGER / 32 S. EWING / HELENA, MT

PRIMARY FUNDING AMOUNT

39,799.67 (FROM NORTHERN TIER PIPELINE CO. APPLICATION FEE)

TIME FRAME

OCTOBER 1978 TO AUGUST 1978

LOCATION

MT / THREE ROUTES ARE BEING DISCUSSED FOR THE MONTANA PORTION OF THE PIPELINE, (APPROX. 624 MILES WITHIN MT)

ABSTRACT

GEOTECHNICAL STUDIES-THIS PROJECT WILL INCLUDE AN INVESTIGATION OF THE HAZARD GEOLOGY AND ENGINEERING FEASIBILITY OF CERTAIN STUDY CORRIDORS IN MONTANA, FOR THE PURPOSE OF IDENTIFYING AND RANKING POSSIBLE ROUTES FOR THE PROPOSED NORTHERN TIER PIPELINE, AND FOR PREPARING MITIGATION MEASURES AND MONITORING PLANS. THIS STUDY WILL INCLUDE: 1) PREPARATION OF A LIST OF MUTUALLY EXCLUSIVE GEOLOGIC HAZARD AND GEOTECHNIC ENGINEERING FEASIBILITY CATEGORIES, CONSIDERING SUCH FACTORS AS THE BEDROCK DEPTH AND WORKABILITY, THE ENGINEERING PROPERTIES OF SOILS AND SEDIMENTS, SLOPE STABILITY AND MASS MOVEMENT, AND AREAS WHERE TERRAIN OR GEOLOGY PRESENTS LIMITATIONS ON CONSTRUCTION OR STABILITY OF THE PIPELINE; 2) PREPARATION OF MAPS SHOWING GEOLOGIC HAZARDS AND AREAS OF ENGINEERING GEOLOGY CONCERN, WITH EMPHASIS ON CRITICAL

AREAS ALONG THE STUDY CORRIDORS AND CRITICAL RIVER CROSSINGS; 3) PREPARATION OF A MAP SHOWING DIAGRAMATICALLY THE RELATIVE ENGINEERING GEOLOGY PARAMETERS; AND 4) AN ANALYSIS OF THE GEOLOGIC HAZARDS AND ENGINEERING GEOLOGY PROBLEMS OF THE PROPOSED PIPELINE AND ASSOCIATED FACILITIES, AND HOW THESE HAZARDS AND PROBLEMS MIGHT LEAD DIRECTLY OR INDIRECTLY TO IMPACTS ON THE ENVIRONMENT. FLOODPLAIN AND HYDROLOGIC STUDIES-THIS STUDY WILL INVOLVE: 1) PREPARATION OF MAPPING CATEGORIES TO ASSIST IN EVALUATING THE RISK OF DAMAGING THE NORTHERN TIER PIPELINE AND ASSOCIATED FACILITIES BY FLOODS, SCOUR, CHANNEL MIGRATION, HIGH WATER TABLE, AND OTHER HYDROLOGICAL PROCESSES; 2) AN ANALYSIS OF THE EXISTING ENVIRONMENT OF THE STREAMS AND FLOODPLAINS IN THE STUDY CORRIDORS (WITH RESPECT TO HYDROLOGY AND GEOMORPHOLOGY); 3) A RANKING OF ALTERNATIVE CENTERLINES AS TO THE RISK THAT THE LINE WOULD BE DAMAGED BY HYDROLOGICAL PROCESSES; 4) AND A RISK ANALYSIS OF THE PROBABILITY OF DAMAGE TO THE PIPELINE AND ASSOCIATED FACILITIES BY HYDROLOGIC PROCESSES. MITIGATING MEASURES, RECLAMATION PLANS, AND MONITORING PROGRAMS WILL ALSO BE DEVELOPED.

STUDY AFFILIATION

THIS IS A SUBPROJECT OF 'NORTHERN TIER PIPELINE PROJECT (ENVIRONMENTAL IMPACT STATEMENT-STATE)', PROJECT NUMBER 0000111A, ENERGY RESEARCH INFORMATION SYSTEMS, PROJECTS REPORT, VO. 3, NO. 1, AUGUST 1978.

REPORTS AND PUBLICATIONS

FINAL REPORT DUE TO DNRC MARCH 1979

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00001303

PROJECT TITLE

NORTHERN TIER PIPELINE ENVIRONMENTAL IMPACT STATEMENT-VISUAL RESOURCE STUDY

INVESTIGATOR(S)

KAREN BARCLAY

RESEARCH INSTITUTION

MONTANA ENERGY & MHD RESEARCH & DEVELOPMENT INST. / P. O. BOX 3809 / BUTTE, MT 59701 / (406) 494-6100

PRIMARY SPONSOR

MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION / DAVID JANIS / 32 S. EWING / HELENA, MT 59601

PRIMARY FUNDING AMOUNT

12,800 (FROM NORTHERN TIER PIPELINE PROJECT APPLICATION FEE.)

TIME FRAME

OCTOBER 1978 TO AUGUST 1979

LOCATION

MT / THREE ROUTES ARE BEING DISCUSSED FOR THE MONTANA PORTION OF THE PIPELINE. (APPROXIMATELY 624 MILES WITHIN MONTANA)

ABSTRACT

THIS PROJECT IS A VISUAL RESOURCES STUDY FOR THE PURPOSE OF IDENTIFYING AND RANKING POSSIBLE ROUTES FOR THE PROPOSED NORTHERN TIER PIPELINE, AND FOR INVESTIGATING THE POTENTIAL IMPACTS OF SAID PIPELINE ON THE VISUAL ENVIRONMENT. THE STUDY WILL INCLUDE: 1) PREPARATION OF A LIST OF CRITERIA BY WHICH THE VISUAL RESOURCES WITHIN THE STUDY CORRIDORS MAY BE RATED IN TERMS OF IMPACT RISK; 2) PREPARATION OF MAPS SHOWING THOSE VISUAL CATEGORIES WITHIN THE STUDY CORRIDORS; 3) A RANKING OF ALTERNATIVE CENTERLINES AS TO THEIR RELATIVE IMPACT RISK TO THE VISUAL RESOURCE; 4) AN ANALYSIS OF POSSIBLE MITIGATING MEASURES WHICH COULD PREVENT OR REDUCE THOSE POTENTIAL IMPACTS ON THE VISUAL RESOURCE.

STUDY AFFILIATION

THIS IS A SUBPROJECT OF 'NORTHERN TIER PIPELINE PROJECT (ENVIRONMENTAL IMPACT STATEMENT-STATE)'. PROJECT NUMBER 0000111A, ENERGY RESEARCH INFORMATION SYSTEM, VOLUME 3, NO. 1, AUGUST 1978.

REPORTS AND PUBLICATIONS

FINAL REPORT DUE TO DNRC MARCH 1979

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00001304

PROJECT TITLE

NORTHERN TIER PIPELINE ENVIRONMENTAL IMPACT STATEMENT-LAND USE STUDIES

INVESTIGATOR(S)

BRET BRUNNER / 434 HARRISON / HELENA, MT 59601 / (406)442-7975

COOPERATOR

OLSON-ELLIOT & ASSOCIATES. / HELENA, MT / ALSO IS RESPONSIBLE FOR PORTIONS OF THE NORTHERN TIER LAND USE STUDIES

PRIMARY SPONSOR

MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION/ DAVID JANIS / 32 S. EWING / HELENA, MT 59601

PRIMARY FUNDING AMOUNT

7,100 (FROM NORTHERN TIER PIPELINE PROJECT APPLICATION FEE.)

TIME FRAME

OCTOBER 1978 TO AUGUST 1979

LOCATION

MT / THREE ROUTES ARE BEING DISCUSSED FOR THE MONTANA PORTION OF THE PIPELINE (APPROX. 624 MILES WITHIN MT)

ABSTRACT

THIS PROJECT WILL CONSIST OF THE LAND USE STUDY FOR THE PURPOSE OF IDENTIFYING AND RANKING POSSIBLE ROUTES FOR THE PROPOSED NORTHERN TIER PIPELINE, AND SHALL INVESTIGATE THE POTENTIAL IMPACTS OF SAID PIPELINE ON LAND USE. THE STUDY WILL INCLUDE: 1) PREPARATION OF A LIST OF CRITERIA BY WHICH THE LAND USE WITHIN THE STUDY CORRIDORS MAY BE RATED IN TERMS OF IMPACT RISK; 2) AN ANALYSIS OF THE EXISTING ENVIRONMENT OF THE STUDY

CORRIDORS WITH RESPECT TO LAND USE; 3) A RANKING OF THE ALTERNATIVE CENTERLINES AS TO THEIR RELATIVE IMPACT RISK TO LAND USE; AND 4) AN ANALYSIS OF ANY POTENTIAL IMPACTS OF THE PROPOSED PIPELINE AND ANY ASSOCIATED FACILITIES ON LAND USE WITHIN THE STUDY CORRIDORS.

STUDY AFFILIATION

THIS IS A SUBPROJECT OF 'NORTHERN TIER PIPELINE PROJECT (ENVIRONMENTAL IMPACT STATEMENT-STATE).' PROJECT NUMBER 00001114, ENERGY RESEARCH INFORMATION SYSTEM PROJECTS REPORT, VOLUME 3, NO.1, AUGUST 1978.

REPORTS AND PUBLICATIONS

FINAL REPORT DUE TO DNRC MARCH 1979.

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00001305

PROJECT TITLE

NORTHERN TIER PIPELINE ENVIRONMENTAL IMPACT STATEMENT-GROUNDWATER STUDIES

INVESTIGATOR(S)

MAX K. BOTZ

RESEARCH INSTITUTION

WESTECH, INC. / 2301 COLONIAL DRIVE / HELENA, MT 59601 / (406) 442-0950

PRIMARY SPONSOR

MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION / RAY BREUNINGER / 32 S. EWING / HELENA, MT 59601

PRIMARY FUNDING AMOUNT

14,275 (FROM NORTHERN TIER PIPELINE APPLICATION FEE)

TIME FRAME

NOVEMBER 1978 TO AUGUST 1979

LOCATION

MT / THREE ROUTES ARE BEING DISCUSSED FOR THE MONTANA PORTION OF THE PIPELINE. (APPROX. 624 MILES WITHIN MT)

ABSTRACT

THIS PROJECT IS AN INVESTIGATION OF THE GROUNDWATER OF STUDY CORRIDORS IN MONTANA, FOR THE PURPOSE OF IDENTIFYING AND RANKING POSSIBLE ROUTES FOR THE PROPOSED NORTHERN TIER PIPELINE, AND FOR PREPARING MITIGATION MEASURES AND MONITORING PLANS.

THE STUDY WILL INCLUDE: 1) PREPARATION OF A LIST OF EXCLUSIVE GROUNDWATER CATEGORIES WHICH ARE RELEVANT TO POTENTIAL IMPACT ON THE GROUNDWATER SYSTEMS AND GROUNDWATER USERS ALONG THE PROPOSED NORTHERN TIER PIPELINE AND ITS ASSOCIATED FACILITIES IN MONTANA; 2) PREPARATION OF A MAP SHOWING THE POTENTIAL HAZARD TO GROUNDWATER AND GROUNDWATER USERS WITHIN THE STUDY CORRIDORS; 3) A COMPARISON OF ALTERNATIVE CENTERLINES ON THE BASIS OF GROUNDWATER CRITERIA (SUCH AS THE SENSITIVITY OF THE GROUNDWATER SYSTEM TO SPILLS, AND THE FEASIBILITY OF CLEANING UP AND ABATING AQUIFER CONTAMINATION); AND 4) A DETAILED ANALYSIS OF ANY POTENTIAL IMPACTS OF THE PROPOSED FACILITY TO GROUNDWATER AND GROUNDWATER USERS (PARTICULARLY FOR AREAS ADJACENT TO STREAMS HIGHLY SENSITIVE TO OIL POLLUTION) WITHIN THE STUDY CORRIDORS.

STUDY AFFILIATION

THIS IS A SUBPROJECT OF 'NORTHERN TIER PIPELINE PROJECT (ENVIRONMENTAL IMPACT STATEMENT-STATE) PROJECT NUMBER 00001114, ENERGY RESEARCH INFORMATION SYSTEM PROJECTS REPORT, VOLUME 3, NO. 1, AUGUST 1978

REPORTS AND PUBLICATIONS

FINAL REPORT DUE TO DNRC MARCH 1979

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00001306

PROJECT TITLE

NORTHERN TIER PIPELINE ENVIRONMENTAL IMPACT STATEMENT-VEGETATION, LAND USE, WILDLIFE, SOILS, AND AQUTIC RESOURCES STUDY

INVESTIGATOR(S)

JOE ELLIOTT

RESEARCH INSTITUTION

OLSON-ELLIOTT & ASSOCIATES / P. O. BOX 1209, 349 LAST CHANCE GULCH / HELENA, MT 59601 / (406) 443-5560

PRIMARY SPONSOR

MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION/ LARRY THOMPSON / RAY BREUNINGER / DAVID JANIS / 32 S. EWING / HELENA, MT 59601

PRIMARY FUNDING AMOUNT

95,000 (FROM APPLICATION FEE FROM NORTHERN TIER PIPELINE CO.)

TIME FRAME

OCTOBER 1978 TO AUGUST 1979

LOCATION

MT / THREE ROUTES ARE BEING DISCUSSED FOR THE MONTANA PORTION OF THE PIPELINE (APPROX. 624 MILES WITHIN MT)

ABSTRACT

THIS PROJECT IS AN INVESTIGATION OF THE VEGETATION, LAND USE, SOILS, AND AQUATIC RESOURCES OF CERTAIN STUDY CORRIDORS IN MONTANA, FOR THE PURPOSE OF IDENTIFYING AND RANKING POSSIBLE ROUTES FOR THE PROPOSED NORTHERN TIER PIPELINE, AND FOR IDENTIFYING ITS POTENTIAL IMPACT. VEGETATION AND LAND USE SITE PATTERNS: 1) A LIST WILL BE PREPARED OF MUTUALLY EXCLUSIVE LAND USE AND VEGETATION CATEGORIES WHICH ARE RELEVANT TO PIPELINE SITING AND IMPACT EVALUATION ALONG THE NORTHERN TIER PIPELINE IN MONTANA. 2) MAPS WILL BE PREPARED SHOWING THESE VEGETATION AND LAND USE CATEGORIES WITHIN THE STUDY CORRIDORS. 3) ALTERNATIVE CENTERLINES WILL BE RANKED AS TO THEIR RELATIVE IMPACT RISK TO VEGETATION, LAND USE, AND LAND PRODUCTIVITY. 4) A DETAILED ANALYSIS WILL BE MADE OF THE POTENTIAL IMPACTS OF THE PROPOSED PIPELINE AND ASSOCIATED FACILITIES ON VEGETATION (PARTICULARLY TO HIGHLY PRODUCTIVE FOREST HABITAT TYPES). MITIGATION

MEASURES AND RECLAMATION PLANS WILL BE DEVELOPED.

TERRESTIAL FAUNA: 1) A LIST OF WILDLIFE SPECIES POPULATIONS, COMMUNITIES, OR HABITATS WHICH COULD BE SIGNIFICANTLY AFFECTED BY THE PROPOSED PIPELINE WILL BE PREPARED. 2) MAPS SHOWING WILDLIFE SITES AND AREAS OF CONCERN WITHIN THE STUDY CORRIDORS WILL BE PREPARED. 3) ALTERNATIVE CENTERLINES WILL BE RANKED AS TO THEIR RELATIVE IMPACT RISK ON WILDLIFE. 4) A DETAILED ANALYSIS WILL BE MADE OF ANY POTENTIAL IMPACTS OF THE PROPOSED PIPELINE AND ASSOCIATED FACILITIES ON WILDLIFE INCLUDING IMPACTS RESULTING FROM DISPLACEMENT, HABITAT ALTERATION, CHANGES IN MORTALITY OR NATALITY RATES, AND/OR STRESS, WITHIN THE STUDY CORRIDORS. MITIGATING MEASURES AND RECLAMATION PLANS WILL BE DEVELOPED.

AQUATIC LIFE AND HABITATS: 1) A LIST WILL BE PREPARED SHOWING WHICH STREAMS WITHIN THE STUDY CORRIDORS MAY BE RATED IN TERMS OF IMPACT RISK TO AQUATIC LIFE AND HABITATS. 2) PREPARATION OF MAPS SHOWING MEAN AND MAXIMUM DISCHARGE CATEGORIES, RESPECTIVELY, OF SURFACE WATER WITHIN 10 KM DOWNSTREAM OF THE STUDY CORRIDORS. 3) ALTERNATIVE CENTERLINES WILL BE RANKED AS TO THEIR RELATIVE IMPACT RISK TO AQUATIC LIFE AND HABITATS. A DETAILED ANALYSIS WILL BE MADE OF ANY POTENTIAL IMPACTS OF THE PROPOSED PIPELINE AND ASSOCIATED FACILITIES UPON THE WATER QUALITY AND UPON AQUATIC LIFE AND HABITATS. POTENTIAL IMPACTS WILL BE DETAILED FOR EACH VARIETY OF ALTERNATIVE SITUATIONS, INCLUDING TUNNELING, TRENCHING SPANNING, AND PARALLELING OF STREAMS. THE FATE OF CRUDE OIL ONCE IT ENTERS A STREAM SYSTEM WILL BE ANALYZED.

EROSION AND RECLAMATION OF SOILS: 1) A LIST WILL BE PREPARED OF MUTUALLY EXCLUSIVE SOIL AND PHYSIOGRAPHIC CATEGORIES WHICH ARE RELEVANT TO EROSION OF SOILS ALONG THE PROPOSED NORTHERN TIER PIPELINE IN MONTANA. 2) MAPS WILL BE PREPARED SHOWING THE SOIL EROSION HAZARD BASED ON THE SOIL AND PHYSIOGRAPHIC CATEGORIES WITHIN THE STUDY CORRIDORS. 3) ALTERNATIVE CENTERLINES WILL BE RANKED AS TO THEIR RELATIVE IMPACT TO SOILS. 4) A DETAILED ANALYSIS WILL BE MADE OF THE POTENTIAL IMPACTS OF THE PROPOSED PIPELINE AND ASSOCIATED FACILITIES ON SOILS (PARTICULARLY FOR AREAS ADJACENT TO STREAMS HIGHLY SENSITIVE TO SEDIMENT POLLUTION) WITHIN THE STUDY CORRIDORS. MITIGATING MEASURES AND RECLAMATION PLANS, AND MONITORING PROGRAMS WILL BE DEVELOPED.

STUDY AFFILIATION

THIS IS A SUBPROJECT OF 'NORTHERN TIER PIPELINE PROJECT (ENVIRONMENTAL IMPACT STATEMENT-STATE)', PROJECT NUMBER 00001114, ENERGY RESEARCH INFORMATION SYSTEM PROJECTS REPORT VOLUME 3, NO. 1 AUGUST 1978.

REPORTS AND PUBLICATIONS

FINAL REPORT DUE TO DNRC MARCH 1979

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00001307
PROJECT TITLE
   COMPILATION OF RENEWABLE ENERGY PROJECT DATA FOR MONTANA
INVESTIGATOR(S)
   KYE COCHRAN / ANNE GARDE / ANGIE LEPROHON
RESEARCH INSTITUTION
   ALTERNATIVE ENERGY RESOURCES ORGANIZATION
   435 STAPLETON BLDG. / BILLINGS, MT 59101
COOPERATOR
   AERO-WEST
PRIMARY SPONSOR
   U.S. DEPT. OF ENERGY
PRIMARY FUNDING AMOUNT
   1,200
TIME FRAME
   NOVEMBER 1977 TO MAY 1978
STATUS
   COMPLETED MAY 1978
LOCATION
   MT
ABSTRACT
   AERO AND AERO-WEST COMPILED DATA ON EXISTING RENEWABLE
   ENERGY PROJECTS AROUND THE STATE IN LATE 1977 AND EARLY 1978.
   QUESTIONNAIRES WERE SENT BY AERO'S MAIN OFFICE TO PEOPLE
   IN THE EASTERN HALF OF THE STATE, AND BY AERO-WEST TO
   PEOPLE IN THE WESTERN HALF OF THE STATE.  THE INFORMATION
   WAS SENT TO THE MONTANA ENERGY OFFICE, FOR USE IN PREPARA-
   TION OF THE MONTANA SOLAR PLAN FOR THE SOLAR PLANNING OFFICE-
   WEST.
REPORTS AND PUBLICATIONS
   RESULTS OF THIS SURVEY ARE REPORTED IN THE MONTANA SOLAR
   PLAN, AVAILABLE FROM THE MONTANA ENERGY DIVISION, DEPT. OF
   NATURAL RESOURCES AND CONSERVATION, 32 S. EWING,
   HELENA, MT 59601
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00001308
PROJECT TITLE
   MONTANA SUSTAINABLE ENERGY PROJECT: BLUEPRINT FOR AN
   ENERGY FUTURE -- DESIGN STUDY
INVESTIGATOR(S)
   JAMES NYEO / BOX 1050 / HELENA, MT 59601 (406)442-9873
PRIMARY SPONSOR
   U.S. DEPT. OF ENERGY
SECONDARY SPONSOR
   MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION
   JAN KONIGSBERG / 32 S. EWING / HELENA, MT 59601
PRIMARY FUNDING AMOUNT
   8,400
SECONDARY FUNDING AMOUNT(S)
   4,000
TIME FRAME
   JANUARY 1979 TO APRIL 1979
LOCATION
   MT
ABSTRACT
   THE DESIGN STUDY FOR THE MONTANA SUSTAINABLE ENERGY PROJECT
   WILL PROVIDE A PLAN FOR THE MAJOR STUDY WHICH WILL BE
   THE MONTANA SUSTAINABLE ENERGY PROJECT.  THIS DESIGN
   STUDY WILL SPECIFY THE TASKS AND THE TIME AND MONEY
   REQUIRED TO COMPLETE THE TASKS. THE PROJECT ITSELF
   WILL EXAMINE THE CONDITIONS REQUIRED FOR THE IMPLEMENTATION
   OF RENEWABLE ENERGY ACROSS THE STATE.  THE PROJECT DESIGN
   STUDY IS INTENDED TO ARTICULATE THE PURPOSE, LIMITS,
   STRUCTURE AND SPECIFIC TASK ELEMENTS OF THE PROJECT.
REPORTS AND PUBLICATIONS
   FORTHCOMING DESIGN STUDY, JUNE 1, 1979
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00001309

PROJECT TITLE

PILOT PROGRAM FOR THE ESTABLISHMENT OF A SOLAR ENERGY BENCHMARK SITE

INVESTIGATOR(S)

AUGUST H. AUER, JR. / JOHN M. WHITE
UNIV. OF WYOMING, DEPT. OF ATMOSPHERIC SCIENCE

RESEARCH INSTITUTION

UNIV. OF WYOMING, RMIEE
BOX 3965, UNIVERSITY STATION/ LARAMIE, WY 82071
(307) 766-6760

PRIMARY SPONSOR

UNIV. OF WYOMING, RMIEE
ESTHER SMITH

PRIMARY FUNDING AMOUNT

1978 - 15,000 (INDUSTRIAL FUND)

TIME FRAME

JANUARY 1978 TO DECEMBER 1978

LOCATION

WY / ALBANY CO. / LARAMIE

ABSTRACT

THE DEPT. OF ATMOSPHERIC SCIENCE, UNIV. OF WYOMING PROPOSED TO ESTABLISH A BENCHMARK STATE-OF-THE-ART MONITORING STATION FOR THE CONTINUOUS MEASUREMENT OF SOLAR ENERGY DATA AT LARAMIE, WYOMING. ATMOSPHERIC PHENOMENA RELATING TO SOLAR ENERGY APPLICATION IS ALSO BEING MONITORED. A SCRUTINY OF THE CALIBRATION AND DATA ACQUISITION PROCEDURES HAS BEEN ESTABLISHED TO INSURE THAT ALL OF THE RADIATION DATA COLLECTED IS OF THE HIGHEST QUALITY AND USEFULNESS. THE DEPT., RECOGNIZING THAT SUCCESSFUL USE OF SOLAR ENERGY REQUIRES A COMPREHENSIVE BASE OF METEROLOGICAL DATA, HAS PROPOSED A PILOT RESEARCH PROGRAM WITH THE FOLLOWING OBJECTIVES: A) THE ACQUISITION OF CONTINUOUS BENCHMARK SOLAR ENERGY DATA; B) THE EXAMINATION OF THE TIME-AVERAGED EFFECTS OF VARIABLE CLOUD TYPE AND AMOUNTS ON THE SCATTERING OF SOLAR ENERGY RECEIVED AT THE EARTH; AND C) PREPARATION OF AN EDUCATIONAL TRAINING PROGRAM RELATED TO THE HANDLING OF SOLAR ENERGY DATA.

THE PROPOSED PILOT PROGRAM PROVIDES AN ENTREE FOR RIGOROUS GRADUATE STUDENT TRAINING TO ENSURE QUALITY METEROLOGICAL/SOLAR ENERGY DATA AS WELL AS THE ANALYSIS AND INTERPRETATION OF SUCH DATA FOR LOCAL, STATE, AND NATIONAL USERS.

REPORTS AND PUBLICATIONS

AUER, JR., A.M. AND J.W. WHITE, PROGRESS REPORT FOR THE PILOT PROGRAM FOR THE ESTABLISHMENT OF A SOLAR ENERGY BENCHMARK SITE, PRESENTED TO THE RMIEE INDUSTRIAL FUND DEPT. OF ATMOSPHERIC SCIENCE, UNIV. OF WYOMING, 25 JULY, 1978, 12 PP. AVAILABLE FROM THE AUTHOR AT NO COST.

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00001310

PROJECT TITLE

WEST ASSOCIATES SOLAR RESOURCE EVALUATION PROJECT

INVESTIGATOR(S)

D. T. SPANGENBERG (PSC) / N. W. PATAPOFF (SCEC)

RESEARCH INSTITUTION

PUBLIC SERVICE CO. OF COLORADO / DENVER, CO 80201
SOUTHERN CALIFORNIA EDISON CO. / ROSEMEAD, CA 91770

COOPERATOR

ARIZONA PUBLIC SERVICE CO. / IMPERIAL IRRIGATION DISTRICT / LOS ANGELES DEPT. OF WATER & POWER / NEVADA POWER CO. / PUBLIC SERVICE CO. OF NEW MEXICO / SALT RIVER PROJECT / SAN DIEGO GAS & ELECTRC CO. / TUCSON GAS & ELECTRIC CO.

PRIMARY SPONSOR

PUBLIC SERVICES CO. OF COLORADO / WEST ASSOCIATES

PRIMARY FUNDING AMOUNT

1976 - 59,000 / 1977 - 65,000 / 1978 - 58,000

TIME FRAME

MARCH 1976 TO DECEMBER 1979

LOCATION

WY / CO / NM / AZ / NV

ABSTRACT

WESTERN ENERGY SUPPLY AND TRANSMISSION ASSOCIATES (WEST) IS SPONSORING A SOLAR RESOURCE EVALUATION STUDY FOR THE THE PURPOSE OF EXTENDING THE EXISTING SOLAR RESOURCE DATA BASE FOR THE WESTERN UNITED STATES IN A UNIFORM, CONSISTENT MANNER. PARTICIPATING WEST UTILITIES ARE PROVIDING THE APPROPRIATE STANDARDIZED INSTRUMENTATION FOR THE MEASUREMENT OF TOTAL OR DIRECT COMPONENTS OF INSOLATION. THE MEASURING STATIONS ARE GENERALLY DESIGNED AND LOCATED ACCORDING TO THE INTENDED APPLICATION OF THE RESOURCE: I.E. SOLAR HEATING AND COOLING OR ELECTRIC POWER GENERATION. SOUTHERN CALIFORNIA EDISON CO., UNDER CONTRACT TO WEST, IS MANAGING THE PROGRAM AND PERFORMING DATA PROCESSING, INSTRUMENT CALIBRATIONS, AND INSTRUMENT PACKAGE DESIGN. PUBLIC SERVICE CO. OF COLORADO HAS INSTALLED PYRANOMETERS TO MEASURE TOTAL INSOLATION AT CHEYENNE, WYOMING AND AT ALAMOSA, PUEBLO AND DENVER (TWO), COLORADO. IN ADDITION, A PYRHELIOMETER, TO MEASURE THE DIRECT COMPONENT OF INSOLATION, HAS BEEN INSTALLED IN ALAMOSA. DATA COLLECTION HAS BEEN UNDERWAY SINCE EARLY 1977.

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00001311

PROJECT TITLE

MONTANA SOLAR PLAN

INVESTIGATOR(S)

KYE COCHRAN

RESEARCH INSTITUTION

ALTERNATIVE ENERGY RESOURCES ORGANIZATION
435 STAPLETON BLDG. / BILLINGS, MT 59101 (406)259-1958

COOPERATOR

THE MONTANA SOLAR ADVISORY COMMITTEE / MONTANA ENERGY OFFICE / MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION

PRIMARY SPONSOR

U.S. DEPT. OF ENERGY

PRIMARY FUNDING AMOUNT

1,000

TIME FRAME

SEPTEMBER 1977 TO MARCH 1978

STATUS

COMPLETED MARCH 1978

LOCATION

MT

ABSTRACT

AS PART OF A 13-STATE WESTERN REGIONAL SOLAR PLANNING EFFORT, MONTANA FORMED A CITIZEN SOLAR ADVISORY COMMITTEE TO PRODUCE A STATE SOLAR PLAN. DURING THE COURSE OF THIS PROJECT A LIST OF MONTANA ORGANIZATIONS INVOLVED WITH RENEWABLE ENERGIES WAS DEVELOPED. AN INVENTORY OF RENEWABLE ENERGY DEVICES AND SYSTEMS AROUND THE STATE WAS COMPILED, A STATE-WIDE PUBLIC OPINION SURVEY FOR AN ASSESSMENT OF ATTITUDES TOWARD SOLAR ENERGY WAS CONDUCTED, AND A LIST OF PROPOSED SOLAR ENERGY PROJECTS FOR MONTANA DEVELOPED. THE MONTANA SOLAR PLAN EMPHASIZED THE NEED FOR COORDINATED SOLAR RESEARCH AND DEVELOPMENT IN THE STATE AND REGION.

STUDY AFFILIATION

THIS PROJECT IS A SUBPROJECT OF 'MONTANA SOLAR PLANNING EFFORT.' SERIAL NUMBER 00001025, ENERGY RESEARCH INFORMATION SYSTEM PROJECTS REPORT, VOLUME 2, NO. 3, NOVEMBER 1977.

REPORTS AND PUBLICATIONS

THE MONTANA SOLAR PLAN, AVAILABLE FROM THE MONTANA ENERGY DIVISION, MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION, 32 S. EWING, HELENA, MT 59601

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00001312

PROJECT TITLE

MONTANA SOLAR HANDBOOK

PROJECT NUMBER

RAF 712-MEC-781

INVESTIGATOR(S)

JAN KONIGSBERG

RESEARCH INSTITUTION

MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION, ENERGY DIV./ CAPITOL STATION / 32 S. EWING / HELENA, MT / (406) 449-3940

PRIMARY SPONSOR

MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION

PRIMARY FUNDING AMOUNT

15,425

TIME FRAME

JUNE 1978 TO DECEMBER 1978

LOCATION

MT / LEWIS AND CLARK CO. / HELENA

ABSTRACT

THIS PROJECT WILL BE TO COMPILE A COMPREHENSIVE SOLAR DIRECTORY FOR MONTANA. THE HANDBOOK WILL BE A SOURCE BOOK: COMPREHENSIVE, TABULATED, INDEXED AND WELL ILLUSTRATED. IT WILL INCLUDE CLIMATOLOGICAL DATA, RETROFIT INFORMATION, INTEGRATED RENEWABLE ENERGY SYSTEMS, THE STATE SOLAR PLAN, AS WELL AS A GLOSSARY OF SOLAR TERMS. IN ADDITION, SEVERAL RESOURCE LISTS WILL BE COMPILED-INCLUDING INDIVIDUALS AND GROUPS WITHIN MONTANA WITH EXPERTISE IN SOLAR DEVICES AND SYSTEMS, LOCAL MANUFACTURERS, RETAILERS, AND DISTRIBUTORS, FINANCIAL INSTITUTIONS IN THE STATE WILLING TO MAKE LOANS FOR SOLAR BUILDING, EXISTING SOLAR FACILITIES IN MONTANA AND OTHER REFERENCES. THE HANDBOOK WILL DRAW TOGETHER STATE-OF-THE-ART INFORMATION PERTAINING TO MONTANA AND ADDRESS PROBLEMS IMPLEMENTING AND DEVELOPING SOLAR ENERGY SYSTEMS THROUGHOUT THE STATE. THE PUBLICATION WILL BE PUBLISHED FOR STATEWIDE DISTRIBUTION.

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00001313

PROJECT TITLE

ATTACHED SOLAR GREENHOUSE AND PASSIVE SPACE HEATING ASSIST

PROJECT NUMBER

RAF 051-JONS-781

INVESTIGATOR(S)

RICHARD L. JONES / ROUTE 1 / ENNIS, MT / (406) 682-4676

PRIMARY SPONSOR

MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION, ENERGY PLANNING DIV. / 32 S. EWING / HELENA, MT 59601

PRIMARY FUNDING AMOUNT

1,849

TIME FRAME

AUGUST 1978 TO AUGUST 1979

LOCATION

MT / MADISON CO. / ENNIS

ABSTRACT

THIS DEMONSTRATION PROJECT WILL BE A 10' X 18' LEAN-TO

TYPE SOLAR GREENHOUSE WITH TWO SOLAR COLLECTORS LOCATED ON THE SOUTH WALL OF AN EXISTING HOUSE. SOLAR ENERGY WILL BE STORED IN WATER-FILLED 55 GALLON BARRELS. TWO WAYS OF ACCOMPLISHING THIS STORAGE ARE UTILIZED: (1) DIRECT SUNLIGHT WILL STRIKE BLACKENED BARRELS THEREBY STORING HEAT WITHIN, AND (2) ACTIVE FLAT PLATE COLLECTORS OUTSIDE THE GREENHOUSE WILL RECEIVE SOLAR RADIATION AND TRANSFER THE COLLECTED HEAT ENERGY TO STORAGE BARRELS INSIDE THE GREENHOUSE. THE SOLAR GREENHOUSE WILL ALSO ASSIST IN PASSIVE SPACE HEATING FOR THE HOME. THE SYSTEM SHOULD PROVIDE 100% OF THE GREENHOUSE HEAT NEEDS AND NO BACKUP IS PROVIDED.

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00001314

PROJECT TITLE
ATTACHED SOLAR GREENHOUSE AND PASSIVE SPACE HEATING ASSIST

PROJECT NUMBER
RAE 052-HNSN-781

INVESTIGATOR(S)
J. LEVI HANSON / BOX 1776 / GILDFORD, MT / (406) 376-2542

PRIMARY SPONSOR
MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION, ENERGY PLANNING DIV. / 32 S. EWING / HELENA, MT 59601

PRIMARY FUNDING AMOUNT
6,446

TIME FRAME
JULY 1978 TO JULY 1979

LOCATION
MT / HILL CO. / GILDFORD

ABSTRACT
THIS PROJECT WILL BE TO ADD A SOUTH-FACING GREENHOUSE TO AN EXISTING DWELLING. THIS PROJECT WILL USE THE "WALK-IN COLLECTOR" CONCEPT; A COMBINATION ATTACHED SOLAR-RELIANT GREENHOUSE/SOLAR COLLECTOR WITH PASSIVE THERMAL STORAGE AND MINIMAL ACTIVE ASSIST. THE SYSTEM IS DESIGNED TO EITHER STORE OR UTILIZE (THROUGH AN EXISTING FORCED AIR SYSTEM) SOLAR HEAT COLLECTED. THIS WILL MAINTAIN A RELATIVELY CONSTANT GREENHOUSE TEMPERATURE. PERFORMANCE WILL BE MONITORED TO DEVELOP DESIGN DATA (CORRELATIONS BETWEEN HEAT LOSS/GAIN, THERMAL MASS AND SQUARE FEET OF COLLECTOR) FOR THE APPLICATION OF OF PASSIVE SOLAR SPACE HEATING IN THIS LATITUDE AND CLIMATE. THE SYSTEM WILL SUPPLY 100% OF THE GREENHOUSE HEATING NEEDS AS THERE IS NO BACKUP SYSTEM, AND IS EXPECTED TO PROVIDE 55% OF THE HOME HEATING.

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00001315

PROJECT TITLE
ATTACHED SOLAR GREENHOUSE AND SPACE HEATING ASSIST-DEMONSTRATION PROJECT

PROJECT NUMBER
RAE 054-CORT-781

INVESTIGATOR(S)
ROBERT J. CORBETT / P. O. BOX 3706 / BUTTE, MT 59701 / (406) 494-2592

PRIMARY SPONSOR
MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION, ENERGY PLANNING DIV. / 32 S. EWING / HELENA, MT 59601

PRIMARY FUNDING AMOUNT
5,912.91

TIME FRAME
JULY 1978 TO JULY 1979

LOCATION
MT / SILVER BOW CO. / BUTTE

ABSTRACT
THIS PROJECT CONSISTS OF THE ADDITION OF A 720 SQUARE FOOT PASSIVE GREENHOUSE OR "SOLARIUM" TO A UNIQUE, EXISTING CONCRETE RESIDENCE. THIS PROJECT WILL: (1) UTILIZE 1440 SQUARE FEET OF A NEW GLAZING MATERIAL; (2) UTILIZE THE CONCRETE WALLS OF THE RESIDENCE FOR THERMAL STORAGE; (3) FEATURE A FAN-FORCED HOT AIR DISTRIBUTION SYSTEM; AND (4) INVESTIGATE TWO UNIQUE METHODS OF VENT/SHUTTER OPERATION IN PASSIVE "GREENHOUSE" STRUCTURES. THE SOLARIUM IS EXPECTED TO PROVIDE A SUBSTANTIAL PROPORTION OF THE SPACE HEAT REQUIRED BY BOTH ITSELF AND THE RESIDENCE TO WHICH IT WILL BE ATTACHED; AN AESTHETICALLY PLEASING SPATIAL ADDITION TO THE RESIDENCE; A HIGH PROPORTION OF THE VEGETABLE REQUIREMENTS OF THE OCCUPANT; AND A HIGHLY VISIBLE DEMONSTRATION OF THE CONCEPTS OF PASSIVE SOLAR TECHNOLOGY AS AN ALTERNATIVE TO NON-RENEWABLE ENERGY SOURCES FOR SPACE HEATING.

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00001316

PROJECT TITLE
GREENHOUSE WITH COMPOST HEATING

PROJECT NUMBER
RAE-046-EKSM-781

INVESTIGATOR(S)
JIM AND DORIS EKSTROM / P.O. BOX 1010 / ROUTE 1 / CLINTON, MT 59825 (406)825-3183

PRIMARY SPONSOR
MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION & ENERGY PLANNING DIV. / 32 S. EWING / HELENA, MT 59601

PRIMARY FUNDING AMOUNT
3,144

TIME FRAME

JULY 1978 TO JULY 1979
LOCATION
MT / MISSOULA CO.
ABSTRACT

THE PURPOSE OF THIS PROJECT IS TO CONSTRUCT. DESIGN. MAINTAIN AND MONITOR AN ENERGY CONSERVING GREENHOUSE THAT WILL BE BUILT AS AN EXTENSION TO A PRIVATE DWELLING. THE GREENHOUSE WILL PROVIDE FOOD. HEAT AND HUMIDITY DURING THE WINTER MONTHS. CONTAINED IN THE GREENHOUSE SYSTEM WILL BE A HOT VAPOR PRODUCING COMPOST CHAMBER WHICH WILL PROVIDE SUPPLEMENTAL HEAT FROM THE DIGESTION AND AEROBIC DECOMPOSITION OF COW MANURE BY THERMOPHILIC BACTERIA. BY-PRODUCTS OF THIS HEAT OPERATING COMPOSTER WILL BE VALUABLE SOIL ADDITIVES. COMPOSTED COW MANURE. HEAT AND ENERGY CONSERVING MATERIALS AND DESIGN. ROCK AND WATER HEAT STORAGE. MOVABLE REFLECTOR PANEL FOR DIRECT INSULATION. DOUBLE GLAZING AND HEAT EXCHANGE WILL BE EMPLOYED. A MONITORING PROGRAM WILL BE EMPLOYED TO MEASURE RATE OF HEAT GAIN PER UNIT OF MANURE IN THE DIGESTER AND EFFECTIVENESS OF HEAT CONSERVATION MATERIALS AND TECHNIQUES. THE SYSTEM WILL SUPPLY 100% OF THE HEAT NEEDED BY THE GREENHOUSE AND NO BACKUP SYSTEM IS PLANNED.

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00001317
PROJECT TITLE
PASSIVE SOLAR HOME DEMONSTRATION PROJECT-HOME SPACE HEATING
PROJECT NUMBER
RAE 041-HUGH-781
INVESTIGATOR(S)
KURT HUGHS / 120 N. CUSTER AVE. / MILES CITY. MT 59301 /
(406) 232-6620
PRIMARY SPONSOR
MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION.
ENERGY PLANNING DIV. /32 S. EWING/ HELENA. MT 59601
PRIMARY FUNDING AMOUNT
5.400
TIME FRAME
AUGUST 1978 TO AUGUST 1979
LOCATION
MT / CUSTER CO. / MILES CITY
ABSTRACT

THIS PROJECT CONSISTS OF THE CONSTRUCTION OF A NEW HOME UTILIZING LARGE AREAS OF GLASS AND MAXIMUM HEAT STORAGE IN THE BUILDING STRUCTURE ITSELF. THE STRUCTURE WILL USE CONCRETE FLOORS AND A MASONRY WALL WITH WATER FILLED TUBES IN ITS CORES TO ACHIEVE THIS GOAL. RECORDS WILL BE KEPT TO COMPARE THE ACTUAL BUILDING EFFICIENCY TO THE CALCULATED BUILDING EFFICIENCY. THE OBJECTIVE IS TO DESIGN AND BUILD A PASSIVE SOLAR HOME FOR APPROXIMATELY $30.000.00 HAVING THE ABILITY TO SUPPLY AT LEAST 60% SOLAR HEATING AND ALLOW FOR COMFORTABLE SUMMER LIVING WITHOUT SACRIFICING AESTHETIC QUALITITES. VIEWS. RESALABILITY. AND TO BUILD IT WITH COMMON CONSTRUCTION TECHNIQUES. AS WELL AS SATISFY THE LIFESTYLE OF ITS OCCUPANTS.

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00001318
PROJECT TITLE
SOLAR HEATING OF MUNICIPAL POOL IN HAMILTON. MONTANA
PROJECT NUMBER
RAE-070-HAML-781
INVESTIGATOR(S)
RAY THRAILKELL
RESEARCH INSTITUTION
CITY OF HAMILTON / BOX 709 / HAMILTON. MT 59840 /
(406) 363-2101
PRIMARY SPONSOR
MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION. ENERGY
PLANNING DIV. / 32 S. EWING / HELENA. MT 59601
PRIMARY FUNDING AMOUNT
36.420
TIME FRAME
JULY 1978 TO JULY 1979
LOCATION
MT / RAVALLI CO / HAMILTON
ABSTRACT

THE CITY OF HAMILTON WILL BE INSTALLING VARIOUS ENERGY CONSERVATION DEVICES IN ORDER TO LOWER MAKE-UP WATER REQUIREMENTS AND THERMAL RADIATION LOSSES. AS WELL AS UPGRADING THE QUALITY OF THE POOL'S EQUIPMENT. IN CONJUNCTION WITH THIS. SOLAR PANELS AND HARDWARE WILL SUPPLY THE MAJORITY OF THE POOL'S HEAT. THE SOLAR PANEL ARRAY WILL BE INSTALLED ON THE ROOF OF THE POOL DRESSING ROOM AND WILL CONSIST OF 48 LOCALLY MANUFACTURED LIQUID FLAT PLATE COLLECTORS MEASURING 22.67 SQUARE FEET A PIECE. IT IS AN ACTIVE CLOSED LOOP SYSTEM USING A SILICONE BASE HEAT TRANSFER FLUID TO PREVENT FREEZING IN THE COLLECTORS OR THEIR PIPING. WHEN EXCESS HEAT IS AVAILABLE PART OF THE HOT FLUID IS DIVERTED TO THE SHOWER HEAT EXCHANGER AND PREHEAT TANKS. THE COLLECTORS WILL BE PROVIDING 85% OF THE HEAT REQUIREMENTSF FOR THE POOL. TO HELP PREVENT HEAT AND EVAPORATION LOSS. A VINYL COVER WILL BE PLACED ON THE POOL SURFACE AT NIGHT AND DURING OFF-HOURS.

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00001319
PROJECT TITLE
PASSIVE TROMBE WALL-EARTH SHELTERED HOUSE

PROJECT NUMBER
RAE-032-MEAN-781
INVESTIGATOR(S)
JOHN R. MEANS / 1616 34TH ST. / MISSOULA, MT 59801
(406)549-2126
PRIMARY SPONSOR
MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION, ENERGY
PLANNING DIV. / 32 S. EWING / HELENA, MT 59601
PRIMARY FUNDING AMOUNT
7,000
TIME FRAME
AUGUST 1978 TO AUGUST 1979
LOCATION
MT / MISSOULA CO. / MISSOULA / PATTEE CANYON
ABSTRACT

THIS PROJECT WILL BE TO BUILD A TROMBE WALL-INTEGRATED GREENHOUSE PASSIVE SOLAR ASSIST FOR AN OWNER DESIGNED 2/3 UNDERGROUND, 3 LEVEL 1800 SQUARE FOOT SOD ROOFED FAMILY DWELLING. IN ADDITION, INSULATING PANELS AND CURTAINS TO RERADIATE AND SLOW HEAT LOSS UNDER CLOUDY AND NIGHT CONDITIONS WILL BE DEVELOPED. A COPPER WATER PREHEATING COIL WILL ALSO BE AN INTEGRAL COMPONENT OF THE TROMBE WALL. THE SYSTEM IS DESIGNED TO PROVIDE 80% OF THE HEATING NEEDS. A WOOD STOVE AND ELECTRICAL HEATERS WILL BE USED FOR THE NECESSARY BACKUP HEATING. A SPECIAL DESIGN EMPHASIS IS ON CREATING PLEASANT LIGHTING EFFECTS AS WELL AS A FEELING OF WARMTH AND COZINESS. THE DESIGN IS INTENDED TO "GROW" WITH THE RAPIDLY CHANGING ECOSYSTEM IN THE RECENTLY BURNED FOREST OF PATTEE CANYON WHERE THE BUILDING SITE IS LOCATED.

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00001320
PROJECT TITLE
SOLAR DEMONSTRATION PROJECT-SOLAR SPACE HEATING USING AIR COLLECTORS
PROJECT NUMBER
RAE 029-ALMR-781
INVESTIGATOR(S)
JOHN D. ALLEMEIER / HAVRE, MT 59501 / (406) 265-2949
PRIMARY SPONSOR
MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION, ENERGY
PLANNING DIV. / 32 S. EWING / HELENA, MT 59601
PRIMARY FUNDING AMOUNT
6309
TIME FRAME
SEPTEMBER 1978 TO SEPTEMBER 1979
LOCATION
MT / HILL CO.
ABSTRACT

THIS PROJECT HAS TWO OBJECTIVES: (1) USING A RENEWABLE SOURCE OF ENERGY, THE SUN, THE PROJECT WILL HEAT A 960 SQUARE FOOT RESIDENCE DURING THE WINTER MONTHS. AT THE SAME TIME THE SYSTEM WILL ACT AS A PREHEATER FOR THE ALREADY EXISTING HOT WATER HEATER IN THE HOME. THIS WILL RESULT IN DECREASING THE HOME'S CONSUMPTION OF COMMERCIAL ENERGIES SUCH AS NATURAL GAS AND ELECTRICITY. (2) THE SYSTEM, AS DESIGNED, WILL ALSO PROVIDE SPACE COOLING FOR THE HOME DURING THE HOT SUMMER MONTHS BY USING A RENEWABLE RESOURCE-THE CONSTANT TEMPERATURE OF THE EARTH. THE PROJECT CONSISTS OF USING TWO STORAGE BINS, ONE FOR HEATING AND ONE FOR COOLING, ALONG WITH TWO AIR FANS, AND A 360 SQUARE FOOT SOLAR COLLECTOR TO HEAT AND COOL THE HOME AND PROVIDE HOT WATER FOR DOMESTIC USE.

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00001321
PROJECT TITLE
SOLAR SPACE HEATING-AIR COLLECTORS
PROJECT NUMBER
RAE 026-GOHN-781
INVESTIGATOR(S)
STEPHEN & GAIL GOHEEN / ROUTE 2, BOX 2578 / HAMILTON, MT
59840 / (406) 363-2385
PRIMARY SPONSOR
MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION, ENERGY
PLANNING DIV./ 32 S. EWING/ HELENA, MT 59601
PRIMARY FUNDING AMOUNT
5,680
TIME FRAME
JULY 1978 TO JULY 1979
LOCATION
MT / RAVALLI CO. / CORVALLIS
ABSTRACT

THE OBJECTIVE OF THIS PROJECT IS TO ECONOMICALLY MAXIMIZE THE USE OF SOLAR ENERGY AS A HEAT SOURCE FOR A NEW SINGLE FAMILY DWELLING. THE ECONOMICS AND COMFORT OF THE RESIDENCE ARE OF PRIME IMPORTANCE. THE PROJECT CONSISTS OF INCORPORATING 600 SQUARE FEET OF FLATPLATE HOT-AIR SOLAR COLLECTOR AND 48 CUBIC YARDS OF ROCK STORAGE INTO A NEW 1,850 SQUARE FOOT SINGLE FAMILY RESIDENCE. THIS SYSTEM IS DESIGNED TO PROVIDE APPROXIMATELY 50% OF THE SPACE HEATING DEMAND. THE HOUSE WILL ALSO DEMONSTRATE DIRECT SOLAR GAIN THROUGH 156 SQUARE FEET OF SOUTHERN GLAZING. THE PROJECT WILL PRESENT A MODEL OF A FUNCTIONING SOLAR HOUSE, WELL ADAPTED TO THE BITTERROOT VALLEY OF MONTANA, THAT TAKES ADVANTAGE OF THE SUN WITHOUT EXTREME DISTORTION OF ITS LIVING SPACE. IT WILL BE A STUDY AND DEMONSTRATION OF THE ECONOMICS OF SOLAR ENERGY.

3.3 WIND ENERGY

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00001322

PROJECT TITLE

NITROGEN FIXATION WITH WIND ENERGY-AMMONIA PRODUCTION PHASE

PROJECT NUMBER

10872228

INVESTIGATOR(S)

DR. RICHARD E. GILBERT

RESEARCH INSTITUTION

UNIV. OF NEBRASKA, DEPT. OF CHEMICAL ENG. / LINCOLN, NE

PRIMARY SPONSOR

OLD WEST REGIONAL COMMISSION / DAVID K. GAARDER /
228 HEDDEN-EMPIRE BLDG. / BILLINGS, MT 59101

PRIMARY FUNDING AMOUNT

44,418

TIME FRAME

JUNE 1978 TO NOVEMBER 1979

LOCATION

NE

ABSTRACT

IT IS ESTIMATED THAT PRODUCTION OF NITROGEN FERTILIZER CONSUMES ABOUT 18% OF THE ENERGY USED IN AGRICULTURE IN THE UNITED STATES (STEINHART AND STEINHART, 1974). IT HAS BEEN PROPOSED TO DEVELOP A SYSTEM CONSISTING OF A LARGE WIND MACHINE, AN ELECTRICAL GENERATOR, AN AIR COMPRESSOR, AN ELECTROLYSIS UNIT, A REACTOR FOR PRODUCING AMMONIA, AND A CONTROL SYSTEM. ENERGY FROM THE WIND WOULD BE USED TO GENERATE ELECTRICITY AND TO COMPRESS AIR. THE ELECTRICITY WOULD DRIVE THE ELECTROLYSIS UNIT AND SEPARATE WATER INTO HYDROGEN AND OXYGEN, USING A CATALYTIC OR OTHER PROCESS, TO PRODUCE AMMONIA. IT IS EXPECTED THAT THE MOST ECONOMICAL SYSTEM WOULD PRODUCE BETWEEN 50 AND 150 TONS OF AMMONIA PER YEAR, WHICH COULD BE APPLIED WITHIN A FEW MILES OF WHERE IT IS PRODUCED, WITH LITTLE DISTRIBUTION AND TRANSPORTATION COST. THE ULTIMATE PROBLEM IN DEVELOPMENT OF THIS SYSTEM IS TO ACHIEVE HIGH EFFICIENCY AT LOW CAPITAL COST, WHICH WILL REQUIRE NEW IDEAS BASED ON ESTABLISHED THEORY AND PRACTICE. ON THE CHEMICAL SIDE IT WILL BE NECESSARY TO DEVELOP EQUIPMENT FOR CONVERTING HYDROGEN AND AIR TO AMMONIA ON A SCALE MUCH SMALLER THAN CURRENT COMMERCIAL PROCESSES WITHOUT SIGNIFICANT LOSS IN EFFICIENCY. ON THE WIND POWER SIDE IT WILL BE NECESSARY TO DEVELOP A LARGE WIND MACHINE AT VERY LOW CAPITAL COST. THE TWO PARTS OF THE PROJECT MUST BE THEN INTEGRATED TO MAXIMIZE SYSTEM EFFICIENCY. IT IS THE CHEMICAL PHASE, THE DEVELOPMENT OF AN AMMONIA CONVERSION UNIT, TO WHICH THIS PROJECT IS DIRECTED.

THE OBJECTIVES ARE 1) TO REVIEW EXISTING TECHNOLOGY FOR CONVERTING NITROGEN AND HYDROLGEN TO AMMONIA; 2) TO DETERMINE THE METHOD(S) MOST PROMISING FOR SMALL SCALE AMMONIA PRODUCTION; AND 3) TO DESIGN AND CONSTRUCT AN EFFICIENT MODEL AMMONIA CONVERSION UNIT CAPABLE OF INTEGRATION WITH A WIND ENERGY SUPPORT SYSTEM.

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00001323

PROJECT TITLE

WIND ENERGY SURVEY IN RURAL AND REMOTE AREAS AROUND LIVINGSTON, MONTANA

PROJECT NUMBER

RAE 212-BRFL-781

INVESTIGATOR(S)

DONALD L. BRELSFORD

RESEARCH INSTITUTION

BRELSFORD ENGINEERING / 315 HAGGERTY LANE / BOZEMAN, MT /
59715 / (406) 587-8486

PRIMARY SPONSOR

MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION, ENERGY
PLANNING DIV. / 32 S. EWING / HELENA, MT 59601

PRIMARY FUNDING AMOUNT

17,295

TIME FRAME

AUGUST 1978 TO AUGUST 1979

LOCATION

MT / PARK CO. / LIVINGSTON AND SPRINGDALE

ABSTRACT

THE OBJECTIVE OF THE PROJECT IS TO ADEQUATELY SURVEY AND DISCOVER SITES WITH A HIGH WIND POTENTIAL IN THE AREA BETWEEN LIVINGSTON AND SPRINGDALE FOR USE AS POSSIBLE WIND POWER PLANT SITES. WIND GATHERING DEVICES AT THE LIVINSTON FAA WEATHER STATION ARE NOT OPERATED WITH THE INTENT OF PROVIDING DATA NECESSARY TO EVALUATE WIND TURBINE EFFECTIVENESS, NOR DOES DATA GATHERED AT THE AIRPORT NECESSARILY REPRESENT THE MAXIMUM POTENTIAL FOR THAT AREA. THIS PROJECT IS INTENDED TO IDENTIFY WINDY SITES ON OR NEAR THE TOP OF HILLS OR RIDGES IN THE STUDY AREA AND MONITOR THOSE SITES TO PROVIDE USEFUL DATA FOR WIND TURBINE CONSIDERATIONS. THE DATA GATHERED WILL BE CORRELATED AND ANALYZED WITH THE LIVINGSTON FAA STATION REPORTS IN ORDER TO ALLOW COMPREHENSIVE, LONG-TERM PROJECTIONS. NINE SITES WILL BE SELECTED WITHIN THE AREA AND A PORTABLE WIND SPEED RECORDER, (MONITORING HEIGHT AT THE NATIONAL STANDARD OF 10 METERS) WILL BE INSTALLED FOR A THREE MONTH MONITORING PERIOD AT EACH SITE. AS THE ACTUAL WIND DATA IS MEASURED AND RECORDED AT THE SURVEY SITES, AVERAGE WIND CORRELATION AND SIMULATION MODELS WILL BE PREPARED. THESE MODELS WILL THEN BE APPLIED TO FORECAST PROBABLE WIND CONDITIONS AND WIND POWER POTENTIAL DURING AN AVERAGE YEAR AT THE SELECTED NINE SURVEY SITES.

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00001324
PROJECT TITLE
WIND PLANT DEVELOPMENT AND TEST PROJECT
PROJECT NUMBER
RAE 218-KSNR-781
INVESTIGATOR(S)
DAVID R. KISSNER / ROUTE 3 / BOX 94A / CONRAD, MT 59425 / (406) 278-5809
PRIMARY SPONSOR
MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION, ENERGY PLANNING DIV./ 32 S. EWING / HELENA, MT 59601
PRIMARY FUNDING AMOUNT
4,700
TIME FRAME
SEPTEMBER 1978 TO SEPTEMBER 1979
LOCATION
MT / PONDERA CO. / CONRAD
ABSTRACT
THIS PROJECT CONSISTS OF CUSTOM MAKING A WIND GENERATOR FROM SALVAGED AND FABRICATED PARTS AND MONITORING THE DEVICE FOR OUTPUT. THE INTENTION IS TO EXPLORE THE FEASIBILITY OF MAKING A HIGH EFFICIENCY, HIGH OUTPUT WIND ELECTRIC PLAN FOR A LOW COST BY USING SURPLUS AND HAND-MADE PARTS. THE UNIT WILL CONSIST OF AN 18 FOOT DIAMETER JACOB'S BLADE AND GOVERNOR COUPLED TO TWO SALVAGED AIRCRAFT GENERATORS (4.8 KW EACH). THE GEARBOX WILL BE CUSTOM MADE AT A LOCAL MACHINE SHOP. ELECTRICAL CONTROL COMPONENTS (VOLTAGE REGULATOR, CURRENT LIMITER, REVERSE CURRENT RELAY) WILL BE STANDARD AIRCRAFT SURPLUS ITEMS. OTHER COMPONENTS, SUCH AS SLIP RINGS, TAIL VANE, MANUAL WINCH, ETC. WILL BE FABRICATED LOCALLY. THE UNIT WILL BE MOUNTED ON AT LEAST A FORTY-FOOT TOWER.

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00001325
PROJECT TITLE
NETWORK WINDPOWER ASSESSMENT OVER THE PACIFIC NORTHWEST
INVESTIGATOR(S)
ROBERT W. BAKER / E. WENDELL HEWSON
RESEARCH INSTITUTION
OREGON STATE UNIV., DEPT. OF ATMOSPHERIC SCIENCES
JOHN E. WADE / AGRICULTURAL HALL / CORVALLIS, OR 97331 (503)754-4557
PRIMARY SPONSOR
BONNEVILLE POWER ADMIN.
PRIMARY FUNDING AMOUNT
112,284
TIME FRAME
OCTOBER 1978 TO SEPTEMBER 1979
LOCATION
BPA SERVICE AREA / OR / WA / ID / MT / NV
ABSTRACT
THE RESEARCH IS COMPOSED OF FIVE PRIMARY TASKS: DATA COLLECTION, DATA ANALYSIS, NETWORK WINDPOWER STUDY, WIND FLOW ANALYSIS AND KITE ANEMOMETER CALIBRATION AND TESTING. MORE WIND POWER DATA STATIONS WILL BE INSTALLED FOLLOWING WIND PROSPECTING FIELD SURVEYS. SPECIAL EMPHASIS WILL BE PLACED ON IDENTIFYING HIGH WIND POWER POTENTIAL AREAS IN IDAHO AND WESTERN MONTANA. THE PRESENT WIND POWER DATA NETWORK CONSISTS OF OVER 60 STATIONS, THROUGH THE PACIFIC NORTHWEST. THE WIND DATA WILL BE ANALYZED FOR VARIOUS CHARACTERISTICS WHICH INCLUDE WIND ROSE SUMMARIES, WIND SPEED FREQUENCY DISTRIBUTIONS, DIURNAL WIND SPEED DISTRIBUTIONS, WIND POWER DENSITY, HIGH WIND SUMMARIES FOR WINDS EQUAL TO OR GREATER THAN 50 MPH, AND OTHER APPROPRIATE INFORMATION. HOURLY WIND DATA FROM SELECTED STATIONS IN THE BPA SERVICE AREA WILL BE USED TO EVALUATE THE COINCIDENT NETWORK WIND POWER AVAILABLE. THE ENERGY OUTPUT FOR VARIOUS WIND TURBINE SIZES AND LOCATIONS WILL BE INVESTIGATED TO DETERMINE THE OPTIMIZATION OF AN ARRAY OF WIND TURBINES TO OBTAIN MAXIMUM ENERGY AND/OR RELIABILITY. THE WIND DATA WILL ALSO BE USED TO DETERMINE HOW AND WHY THE WIND BLOWS AS IT DOES OVER THE COMPLEX TERRAIN IN THE NORTHWEST: THE RESULTS WILL BE DIRECTLY APPLICABLE TO IMPROVING CONVENTIONAL SUBJECTIVE WIND FORECAST TECHNIQUES. THE KITE ANEMOMETER IS AN INEXPENSIVE, PORTABLE INSTRUMENT FOR EXAMINING THE VERTICAL STRUCTURE OF THE WIND. THE KITE WILL BE CALIBRATED AGAINST METEOROLOGICAL TOWER INSTRUMENTS AND WIND TUNNEL TESTING. THIS ANEMOMETER WILL BE USED EXTENSIVELY IN THE PROPOSED SITE SURVEY WORK BOTH IN KNOWN HIGH WIND AREAS AND ALSO IN LOCATING NEW POTENTIAL WIND POWER SITES.
REPORTS AND PUBLICATIONS
NETWORK WIND POWER OVER THE PACIFIC NORTHWEST, E. WENDELL HEWSON AND R. W. BAKER, BPA REPORT NO. 77-2, JANUARY 1978. THIS REPORT CAN BE OBTAINED BY WRITING NICHOLAS BUTTER, BONNEVILLE POWER ADMIN., 1002 N.E. HOLLADAY ST., P.O. BOX 3621, PORTLAND, OR 97208

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00001326

PROJECT TITLE
PROPOSED GEOTHERMAL LEASING IN THE MARYSVILLE AREA-ENVIRONMENTAL ASSESSMENT RECORD (EAR)

INVESTIGATOR(S)
JACK MACINTOSH

RESEARCH INSTITUTION
U.S. BUREAU OF LAND MANAGEMENT, BUTTE DISTRICT / BOX 308/ BUTTE, MT 59701

COOPERATOR
U.S. FOREST SERVICE, HELENA NATIONAL FOREST/HELENA, MT 59601
U.S. GEOLOGICAL SURVEY / U.S. FISH AND WILDLIFE SERV. / MONTANA BUREAU OF MINES AND GEOLOGY / MONTANA COLLEGE OF MINERAL SCIENCES AND TECHNOLOGY / MONTANA DEPT. OF NATURAL RESOURCES AND CONSERVATION

PRIMARY SPONSOR
U.S. BUREAU OF LAND MANAGEMENT, BUTTE DISTRICT

SECONDARY SPONSOR
U.S. FOREST SERVICE, HELENA NATIONAL FOREST

TIME FRAME
MAY 1975 TO JULY 1978

LOCATION
MT / LEWIS AND CLARK CO. / MARYSVILLE KNOWN GEOTHERMAL RESOURCE AREA (KGRA)

ABSTRACT
THE MARYSVILLE GEOTHERMAL AREA ENVIRONMENTAL ASSESSMENT RECORD (EAR) WAS PREPARED TO: (1) IDENTIFY THE ANTICIPATED FROM GEOTHERMAL LEASES; (2) DETERMINE IF AN ENVIRONMENTAL IMPACT STATEMENT IS REQUIRED PRIOR TO GEOTHERMAL LEASING IN THE MARYSVILLE AREA; (3) DETERMINE IF GEOTHERMAL LEASES SHOULD BE ISSUED IN THE MARYSVILLE AREA; (4) IDENTIFY NEEDED ENVIRONMENTAL STIPULATIONS, IN ADDITION TO THOSE ALREADY IN FORCE, THAT SHOULD BE INCLUDED IN THE LEASE; AND (5) MEET THE REQUIREMENTS OF THE NATIONAL ENVIRONMENTAL PROTECTION ACT OF 1969.

REPORTS AND PUBLICATIONS
DRAFT EAR, AND SUMMARY EAR, AUGUST 16,1976.
FINAL ENVIRONMENTAL ASSESSMENT RECORD, MARYSVILLE GEOTHERMAL, BUTTE DISTRICT BLM, AND THE HELENA NATIONAL FOREST, JULY 1978.

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00001327

PROJECT TITLE
GEOLOGIC INVESTIGATIONS IN THE NORTHERN CENTENNIAL VALLEY, MONTANA

INVESTIGATOR(S)
ROBERT A. CHADWICK / MATTHEW MANNICK

RESEARCH INSTITUTION
MONTANA STATE UNIV., DEPT. OF EARTH SCIENCES/ BOZEMAN, MT 59717 / (406) 994-3331

PRIMARY SPONSOR
MONTANA BUREAU OF MINES & GEOLOGY

PRIMARY FUNDING AMOUNT
2,000

TIME FRAME
JUNE 1978 TO SEPTEMBER 1978

LOCATION
MONTANA / NORTHERN CENTENNIAL VALLEY

ABSTRACT
MAPPING OF ROCK UNITS AND GEOLOGIC STRUCTURES IN THE MOUNTAINS IMMEDIATELY NORTH OF THE CENTENNIAL VALLEY, INCLUDING ELK LAKE-HIDDEN LAKE AREA AND UPPER DRAINAGE OF THE WEST FORK MADISON RIVER. UNDERSTANDING THE GEOLOGY OF THE AREA WILL HELP EVALUATE GEOTHERMAL POTENTIAL OF THE REGION BY COMPARING GEOLOGIC ROCK UNITS AND STRUCTURES WITH THOSE NEAR WARM SPRINGS JUST WEST AND NORTH OF THE STUDY AREA. GEOLOGIC INFORMATION WILL ALSO BE COMPARED WITH CHEMICAL DATA ON THE WARM SPRINGS ACQUIRED BY THE MONTANA BUREAU OF MINES AND GEOLOGY.

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00001328

PROJECT TITLE
FEASIBILITY OF USING A MAGNETOHYDRODYNAMIC GENERATOR FOR ELECTROMAGNETIC SOUNDINGS OF THE EARTH

PROJECT NUMBER
E(49-1)-2426

INVESTIGATOR(S)
D. FLEMING

RESEARCH INSTITUTION
MONTANA COLLEGE OF MINERAL SCIENCE AND TECHNOLOGY BUTTE, MT 59701 / (406)792-8321 EXT. 278

COOPERATOR
L. BALL

PRIMARY SPONSOR
U.S. ERDA, DIV. OF GEOTHERMAL ENERGY / WASHINGTON, D. C.

PRIMARY FUNDING AMOUNT
8,000

TIME FRAME
MARCH 1976 TO JULY 1976

LOCATION
NATIONWIDE

ABSTRACT
THERE ARE NUMEROUS GEOTHERMAL AREAS WHICH COULD BE MORE CLEARLY DELINEATED THROUGH THE USE OF ADVANCED ELECTROMAGNETIC SOUNDINGS MADE FROM THE SURFACE. THE

DEPTH AND RESOLUTION OF PRESENT SYSTEMS ARE LARGELY NOISE OR FREQUENCY/WAVE LENGTH LIMITED. THE OBJECTIVE OF THIS STUDY IS TO CONSIDER THE USE OF MORE EXOTIC RECEIVERS IN CONJUNCTION WITH A HIGH POWERED SOURCE OPERATING IN THE TIME DOMAIN. THE FEASIBILITY STUDY ACCOMPLISHED SOME BASIC ENGINEERING ON THE USE OF AN MHD PULSE GENERATOR IN CONJUNCTION WITH PULSE STACKING RECEIVERS. THE RUSSIANS HAVE BUILT AND SUCESSFULLY USED MHD GENERATORS FOR GEOPHYSICAL PROSPECTING. THUS, TECHNICALLY, THE CONCEPT IS FEASIBLE. FIVE INSTITUTIONS ARE PROPOSING TO COOPERATE ON A PROGRAM TO PROVIDE (BUILD OR LEASE) A PULSE GENERATOR WITH COMPATIBLE RECEIVERS IN THE U.S. THE PROGRAM WOULD BE COORDINATED BY THE INSTITUTE FOR ELECTROMAGNETIC RESEARCH IN COLORADO.

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00001329

PROJECT TITLE

RECONNAISSANCE STUDY OF MINE-WATER TEMPERATURES IN HARD-ROCK MINING DISTRICTS OF MONTANA

PROJECT NUMBER

E(45-1)92426

INVESTIGATOR(S)

J. L. SONDEREGGER

RESEARCH INSTITUTION

MONTANA COLLEGE OF MINERAL SCIENCE AND TECHNOLOGY
BUTTE, MT 59701 / (406)792-8321

COOPERATOR

NICHOLS, C. R.

PRIMARY SPONSOR

U. S. ERDA, DIV. OF GEOTHERMAL ENERGY / WASHINGTON, D.C.

PRIMARY FUNDING AMOUNT

20,000

TIME FRAME

MAY 1976 TO JUNE 1977

LOCATION

MT

ABSTRACT

RECONNAISSANCE INVESTIGATIONS OF MINE-WATER TEMPERATURES PROVIDE A COST EFFECTIVE MEANS OF LOCATING THERMAL ANOMOLIES IN ADVANCE OF MORE COSTLY AND TIME CONSUMING GEOPHYSICAL TECHNIQUES. THE STUDY WILL CONSIST OF A SYSTEMATIC SAMPLING FOR TEMPERATURE AND CONDUCTIVITY OF MINE-WATER IN 199 HARDROCK MINING DISTRICTS IN WESTERN MONTANA. APPROXIMATELY 750 INDIVIDUAL MINES WILL BE SAMPLED AND SAMPLING WILL BE REPEATED 3 TIMES IN AREAS ACCESSIBLE THROUGHOUT THE YEAR IN ORDER TO OBSERVE ANY SEASONABLE VARIATIONS. FLOW OF WATER AT THE SAMPLING POINT WILL BE ESTIMATED AND WATERS HAVING A TEMPERATURE OF 40 DEGREES C OR GREATER WILL BE COLLECTED ACCORDING TO STANDARD THERMAL WATER SAMPLING TECHNIQUES AND ANALYZED IN THE MONTANA BUREAU OF MINES AND GEOLOGY LABORATORY. AN EVALUATION OF THE DISTRIBUTION OF ANOMOLOUS TEMPERATURES AND WATER CHEMISTRY WILL BE POSSIBLE AS A RESULT OF THE BROAD GEOGRAPHIC DISTRIBUTION OF THE MINING DISTRICTS.

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00001330

PROJECT TITLE

DEVELOPMENT OF FIRST-MOTION HOLOGRAPHY FOR EXPLORATION OF GEOTHERMAL ENERGY SOURCES

PROJECT NUMBER

14-08-0001-G-339

INVESTIGATOR(S)

K. AKI

RESEARCH INSTITUTION

M.I.T., SCHOOL OF SCIENCE, EARTH & PLANETARY SCIENCES /
77 MASSACHUSETTS AVE. / CAMBRIDGE, MA 02139

PRIMARY SPONSOR

U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV.

PRIMARY FUNDING AMOUNT

62,737

TIME FRAME

OCTOBER 1976 TO SEPTEMBER 1977

LOCATION

HI
WY

ABSTRACT

CONVENTIONAL SEISMIC METHODS ARE INADEQUATE FOR THE EXPLORATION OF ENERGY SOURCES WITH COMPLICATED SHAPES SUCH AS MAGMA CHAMBERS, HYDRO-THERMAL COMPLEXES, DIKES, SILLS AND OTHER GEOLOGIC FORMATIONS OF POTENTIAL HEAT SOURCE. NEW SEISMIC METHODS, APPLICABLE TO ARBITRARY THREE-DIMENSIONAL STRUCTURES WILL BE DEVELOPED. ANALYSES OF TELESEISMIC DATA FROM USGS YELLOWSTONE AND AND HAWAII ARRAYS HAVE IDENTIFIED A HIGH VELOCITY COLUMNAR ANOMALY UNDER KILAUEA IN CONTRAST TO A LOW-VELOCITY ANOMALY UNDER YELLOWSTONE. SINCE GEOTHERMAL SOURCES CAN BE ASSOCIATED WITH HIGH OR LOW VELOCITY ANOMALIES, IT IS IMPORTANT (THEREFORE) TO STUDY THE SEISMIC VELOCITY ANOMALIES IN MANY GEOTHERMAL AREAS WITH DIFFERENT GEOLOGIC ENVIRONMENTS AND CORRELATE THE VELOCITY ANOMALIES WITH OTHER GEOPHYSICAL AND GEOLOGIC DATA. THIS INVOLVES (1) DATA ACQUISITION FROM EXISTING ARRAYS IN GEOTHERMAL AREAS IN THIS COUNTRY AND JAPAN; (2) IMPROVEMENT OF THE DATA INVERSION METHOD BY INCORPORATING THREE DIMENSIONAL RAY TRACING, BY INCLUDING AMPLITUDE AND S-WAVE DATA AND BY COMBINING THE LOCAL AND TELESEISMIC DATA; (3) LABORATORY EXPERIMENTS IN TRANSMISSION HOLOGRAPHY AND APPLICATION TO THE SEISMIC ARRAY DATA; (4) DEVELOPING A PROTO-TYPE FIRST-MOTION PICKER.

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00001331

PROJECT TITLE

DEVELOP MERCURY GEOCHEMISTRY AS A TOOL FOR GEOTHERMAL EXPLORATION

PROJECT NUMBER

14-08-001-G-383

INVESTIGATOR(S)

P.R. BUSEK

RESEARCH INSTITUTION

ARIZONA STATE UNIV., DEPT. OF CHEMISTRY & GEOLOGY
TEMPE, AZ 85281

PRIMARY SPONSOR

U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV.

PRIMARY FUNDING AMOUNT

FY 77 - $1,700

TIME FRAME

OCTOBER 1976 TO SEPTEMBER 1977

LOCATION

WY / CA

ABSTRACT

DEMONSTRATE THE RELATIONSHIP OF HG ANOLMALIES TO THE LOCATION OF GEOTHERMAL TARGET AREAS BY REFINING THE PROCEDURES FOR INTERPRETATION. MORE FULLY EXPLORE THE APPLICABILITY AND LIMITATIONS OF MEASUREMENT OF TRACE AMOUNTS OF HG TO INDICATE PRESENCE OF GEOTHERMAL AREAS. RELATE THE MEASUREMENT OF HG TO DIFFERENTIATE HOT WATER VS. VAPOR DOMINATED SYSTEMS, AND EXTINCT FROM ACTIVE GEOTHERMAL AREAS. DETERMINE THE RELATIONSHIPS BETWEEN THE NATURE AND SIZE OF HG ANOMALY AND MAGNITUDE OF THE UNDERLYING GEOTHERMAL AREAS. INVESTIGATE CORRELATIONS BETWEEN OTHER TRACE ELEMENTS AND HG TO GEOTHERMAL AREAS. DEVELOP CHARACTERISTICS THAT CAN BE USED TO DISTINGUISH GEOTHERMAL AREAS FROM ORE DEPOSITS. EXPLORE THE MECHANISM OF MOVEMENT AND CAPTURE OF HG AND RELATE THIS TO ITS GEOCHEMICAL CYCLE.

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00001332

PROJECT TITLE

GEOTHERMAL RESOURCE DEVELOPMENT, BOULDER, MONTANA -- ENVIRONMENTAL ASSESSMENT RECORD (EAR)

RESEARCH INSTITUTION

U.S. FOREST SERVICE / DEER LODGE NATIONAL FOREST /
BUTTE, MT 59701
U.S. BUREAU OF LAND MANAGEMENT / BUTTE DISTRICT / BOX
308 / BUTTE, MT 59701

PRIMARY SPONSOR

U.S. BUREAU OF LAND MANAGEMENT, BUTTE DISTRICT
U.S. FOREST SERVICE, HELENA NATIONAL FOREST

TIME FRAME

JANUARY 1975 TO JANUARY 1977

LOCATION

COMPLETED JANUARY 1977
GEOTHERMAL RESOURCE AREA)

ABSTRACT

THE PURPOSE OF THIS ANALYSIS AND REPORT IS TO DETERMINE AND DOCUMENT WHICH PARTS OF THE IDENTIFIED FEDERAL LANDS, IF ANY, SHOULD BE LEASED FOR GEOTHERMAL RESOURCE DEVELOPMENT IN THE BOULDER HOT SPRINGS KGRA. ADDITIONALLY, THIS STUDY PROVIDES THE BASIS FOR ANALYZING FUTURE LEASE APPLICATIONS STUDY AREA.

REPORTS AND PUBLICATIONS

BOULDER HOT SPRINGS GEOTHERMAL AREA ENVIRONMENTAL ASSESSMENT RECORD, JANUARY 1977. PREPARED BY THE DEER LODGE NATIONAL FOREST AND THE BUTTE DISTRICT, BLM.

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00001333

PROJECT TITLE

AN INVESTIGATION OF GEOTHERMAL DEVELOPMENT POTENTIAL FOR WARM SPRINGS, MONTANA AREA

PROJECT NUMBER

RAE SIS-WOMN-781

INVESTIGATOR(S)

C. WIDEMAN

RESEARCH INSTITUTION

MONTANA COLLEGE OF MINERAL SCIENCE AND TECHNOLOGY
BUTTE, MT 59701

PRIMARY SPONSOR

MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION,
ENERGY PLANNING DIV. / 32 S. EWING / HELENA, MT 59601

PRIMARY FUNDING AMOUNT

10,265

TIME FRAME

JULY 1978 TO JULY 1979

LOCATION

MT / SILVER BOW CO. / BUTTE

ABSTRACT

THIS GRANT WILL BE FOR THE FIRST PHASE OF A PROJECT TO UTILIZE THE GEOTHERMAL RESOURCE IN THE WARM SPRINGS AREA. THE FIRST PHASE INCORPORATES AN INTERPRETATIVE STUDY TO PROVIDE DETAILED DATA CONCERNING GEOTHERMAL PARAMETERS OF THE AREA AND SURVEY FOR LOCATION OF A TEST WELL. IN CONJUNCTION WITH THE STUDY, THE MONTANA ENERGY AND MHD RESEARCH & DEVELOPMENTS INSTITUTE, INC., WILL BE APPLYING FOR A FEDERAL GRANT AND USING MONIES OF THIS GRANT FOR MATCHING FUNDS, IN ORDER TO RETROFIT THE WARM SPRINGS

STATE HOSPITAL HOT WATER SUPPLY TO GEOTHERMAL HEAT:
DO EXPLORATORY DRILLING TO DETERMINE THE SIZE OF THE GEOTHERMAL RESERVOIR AND PROPOSE CONVERSION OF OTHER HOSPITAL UTILITIES TO THE GEOTHERMAL HEAT SOURCE IF THE GEOTHERMAL RESERVOIR IS OF SUFFICIENT CAPACITY. THE GEOTHERMAL SOURCE AT WARM SPRINGS STATE HOSPITAL IS OF ARTESIAN NATURE, WITH ITS FLOW AT THE SURFACE ALREADY ESTABLISHED AND TEMPERATURE WITHIN USEFUL RANGE FOR SPACE HEATING OR SIMILAR APPLICATION. THE SOURCE IS EXPECTED TO SUPPLY 50% OF THE HOT WATER NEEDS FOR THE HOSPITAL WITH BACKUP HEATING BEING SUPPLIED BY THE CENTRAL POWER PLANT. THE INITIAL STUDY WILL TAKE ONE YEAR; THE REMAINING STUDIES AND CONSTRUCTION WILL OCCUR OVER A THREE-YEAR PERIOD.

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00001334

PROJECT TITLE

LIBBY DAM AND LAKE KOOCANUSA KOOTENAI RIVER, MONTANA - LIBBY ADDITIONAL UNITS AND REREGULATING DAM -- ENVIRONMENTAL IMPACT STATEMENT SUPPLEMENT

INVESTIGATOR(S)

RAYMOND J. EINEIGL

RESEARCH INSTITUTION

U.S. CORPS OF ENGINEERS, SEATTLE DIV. / 4735 E. MARGINAL WAY SO. / SEATTLE, WA 98134

PRIMARY SPONSOR

U.S. CORPS OF ENGINEERS

STATUS

COMPLETED JANUARY 1976

LOCATION

MT / LINCOLN CO. / KOOTENAI RIVER

ABSTRACT

THE LIBBY ADDITIONAL UNITS AND REREGULATING DAM PROJECT IN LINCOLN COUNTY, MONTANA WOULD CONSIST OF THE INSTALLATION OF FOUR ADDITIONAL 105 MEGAWATT GENERATORS AND TURBINES AT THE MAIN LIBBY DAM PLUS CONSTRUCTION OF A REREGULATING DAM, RESERVOIR AND CONTROL WORKS ON THE KOOTENAI RIVER 10 MILES DOWNSTREAM. THE REREGULATING DAM EMBANKMENT WOULD BE OF EARTH AND ROCKFILL CONSTRUCTION, STAND ABOUT 75 FEET ABOVE THE RIVER BOTTOM, AND EXTEND 600 FEET ACROSS THE KOOTENAI RIVER.

INSTALLATION OF ADDITIONAL GENERATING UNITS AND CONSTRUCTION OF THE REREGULATING DAM WOULD CONTRIBUTE TO MEETING INDUSTRIAL, COMMERCIAL, PUBLIC AND DOMESTIC ENERGY NEEDS BY ADDING 420 MEGAWATTS OF CAPACITY TO THE POWER SYSTEM. THE REREGULATING FACILITY WOULD ALLOW INCREASED PRODUCTION OF ENERGY AT MAIN LIBBY DAM DURING PERIODS OF PEAK DEMAND THAT WOULD NOT BE POSSIBLE OTHERWISE DUE TO RAPID CHANGES IN WATER SURFACE ELEVATIONS DOWNSTREAM FROM LIBBY DAM. TEN MILES OF THE FREE-FLOWING KOOTENAI RIVER WOULD BE INUNDATED; THIS SECTION OF THE RIVER WOULD BE CONVERTED TO A FLUCTUATING RESERVOIR.

REPORTS AND PUBLICATIONS

LIBBY DAM AND LAKE KOOCANUSA ENVIRONMENTAL IMPACT STATEMENT 1972 / LIBBY REREGULATING DAM - AT-SITE POWER EIS - 1973 / LIBBY ADDITIONAL UNITS AND REREGULATING DAM EIS SUPPLEMENT 1 - 1976 /

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00001335

PROJECT TITLE

EFFECTS OF PEAKING OF RESERVOIR DISCHARGES ON FISH

PROJECT NUMBER

P4435-903

INVESTIGATOR(S)

G. K. O'BRYAN

RESEARCH INSTITUTION

U.S. FISH & WILDLIFE SERV., NORTH CENTRAL RESERVOIR INVEST. BOX 698 / PIERRE, SD 57501

PRIMARY SPONSOR

U.S. FISH & WILDLIFE SERV., DIV. OF POPULATION ECOLOGY

TIME FRAME

OCTOBER 1976 TO SEPTEMBER 1977

LOCATION

SD

ABSTRACT

FUTURE ENERGY PLANNING INDICATES THAT HYDROELECTRIC POWER PLANTS WILL BE USED PRIMARILY FOR PEAKING PURPOSES. DISCHARGES FROM POWER PLANTS WILL BE CONCENTRATED INTO SHORTER PERIODS OF TIME. THE OBJECTIVE OF THIS PROJECT IS TO DETERMINE THE ECOLOGICAL EFFECTS OF PRESENT PEAKING SCHEDULES ON FISH AND FISH FOOD IN AND BELOW LAKES OAHE AND SHARPE. PAST RESEARCH ON THESE RESERVOIRS HAS REVEALED THE EFFECTS OF ANNUAL AND MONTHLY VARIATIONS IN DISCHARGE ON FISH, ZOOPLANKTON, AND WATER TEMPERATURE, BUT NO INFORMATION IS AVAILABLE ON THE EFFECT OF DISCHARGE VARIATIONS WITHIN A DAILY OR WEEKLY PERIOD.

FOR THIS PROJECT THE FOLLOWING FIELD DATA WILL BE COLLECTED AND RELATED TO VARIATIONS IN DISCHARGE LEVELS: 1) MORTALITY AND ABUNDANCE OF FISH LARVAE AND ZOOPLANKTON THAT PASS THROUGH POWERHOUSES; 2) MOVEMENT OF ADULT FISH BELOW POWERHOUSES; AND 3) CURRENT AND OTHER PHYSICAL CONDITIONS IN TAIL WATERS.

CRITERIA WILL BE DEVELOPED FOR EVALUATING THE ECOLOGICAL EFFECTS OF ADDING INCREASED PEAKING CAPABILITY TO RESERVOIR POWERHOUSES. ALSO INCLUDED UNDER THIS PROJECT ARE STUDIES ON THE LIMNOLOGY OF LAKE SHARPE. DATA HAVE BEEN COLLECTED AND A REPORT IS IN PREPARATION.

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00001336
PROJECT TITLE
BIOGAS FEASIBILITY STUDY FOR MONTANA
PROJECT NUMBER
RAE 412-MCBD-781
INVESTIGATOR(S)
JOHN MCBRIDE
RESEARCH INSTITUTION
NATIONAL CENTER FOR APPROPRIATE TECHNOLOGY / P. O. BOX 3838 / BUTTE, MT 59701 / (406)723-5474
COOPERATOR
LAUREN MCKINSEY / MONTANA STATE UNIV., DEPT. OF POLITICAL SCIENCE / (406) 994-4141
PRIMARY SPONSOR
MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION, ENERGY PLANNING DIV. / 32 S. EWING / HELENA, MT 59601
PRIMARY FUNDING AMOUNT
25,624
TIME FRAME
SEPTEMBER 1978 TO SEPTEMBER 1979
LOCATION
MT / SILVER BOW CO. / BUTTE
ABSTRACT

THIS PROJECT CONSISTS OF EVALUATING BIOGAS GENERATION FROM AGRICULTURAL WASTE FOR ON-SITE FUEL, PARTICULARLY FOR WINTER AVAILABILITY, AS IT SPECIFICALLY RELATES TO THE CLIMATE AND TYPE OF AGRICULTURAL OPERATION CURRENTLY PRACTICED IN THE STATE OF MONTANA. IT WILL CONSIST OF THREE TASKS: (1) AN ASSESSMENT OF EXISTING TECHNOLOGY AND HARDWARE; (2) A SITE SURVEY OF POSSIBLE SITES FOR A DEMONSTRATION PLANT; AND (3) THE PRELIMINARY DESIGN OF A SPECIFIC FACILITY. PROBLEMS TO BE ADDRESSED WILL INCLUDE STATE OF THE ART LIMITATIONS DUE TO FACTORS INFLUENCING BIOLOGICAL ACTIVITY AND DUE TO MECHANICAL PROBLEMS ASSOCIATED WITH HANDLING WASTES, DIGESTOR DESIGN AND DIGESTOR OPERATION WITH EMPHASIS UPON ADAPTION TO MONTANA CLIMATIC CONDITIONS. THE ECONOMIC FEASIBILITY OF VARIOUS DIGESTOR SYSTEMS WILL BE EVALUATED. THE END PRODUCT WILL BE A PAPER EVALUATING BIOGAS GENERATION IN THE STATE OF MONTANA AND A MORE DETAILED DESCRIPTION OF A POSSIBLE DEMOSTRATION PROJECT INCLUDING SPECIFIC SITES AND HARDWARE.

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00001337
PROJECT TITLE
ATTACHED GREENHOUSE, "TRICKLE" COLLECTOR, WOOD STOVE AND WIND STUDY
PROJECT NUMBER
RAE 047-MCLM-781
INVESTIGATOR(S)
BRUCE MCCALLUM / P. O. BOX 607 / CHESTER, MT / (406) 759-5683
PRIMARY SPONSOR
MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION, ENERGY PLANNING DIV. / 32 S. EWING / HELENA, MT 59601
PRIMARY FUNDING AMOUNT
2,294
TIME FRAME
AUGUST 1978 TO AUGUST 1979
LOCATION
MT / LIBERTY CO. / CHESTER
ABSTRACT

THIS PROJECT CONSISTS OF SUPPLEMENTING THE HEAT STORAGE CAPABILITY OF AN EXISTING ATTACHED SOLAR RELIANT GREENHOUSE THROUGH THE ADDITION OF A SOLAR PANEL AND THE CONSTRUCTION OF A WATER CIRCULATION SYSTEM AND THE INTEGRATION OF THESE WITH AN EXISTING WOOD STOVE INTO A SINGLE SYSTEM. THE PURPOSE IS TO INSURE TWELVE MONTH OPERATION OF THE GREENHOUSE AND TO DECREASE THE HOME'S CONSUMPTION OF ELECTRICITY FOR SPACE AND WATER HEATING. THE PROJECT ALSO CONSISTS OF A WIND STUDY TO DETERMINE THE FEASIBILITY OF ERECTING A WIND GENERATOR WITHIN THE RESIDENTIAL AREA OF A SMALL RURAL COMMUNITY IN EASTERN MONTANA.

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00001338
PROJECT TITLE
WOOD FURNACE DEMONSTRATION PROJECT
PROJECT NUMBER
RAE311 MASN-7811
INVESTIGATOR(S)
JOHN M. MASON / BLUE SKY HEIGHTS / CLANCY, MT 59634
PRIMARY SPONSOR
MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION / ENERGY PLANNING DIV. / 32 S. EWING / HELENA, MT 59601
PRIMARY FUNDING AMOUNT
510
TIME FRAME
OCTOBER 1978 TO OCTOBER 1979
LOCATION
MT / JEFFERSON CO. / 4 MILES NORTH OF CLANCY
ABSTRACT

THIS PROJECT INVOLVES INSTALLING A HIPPERT WOOD FURNACE TO OPERATE IN COORDINATION WITH THE CONVENTIONAL GAS

FURNACE IN HEATING A 1400 SQUARE FOOT HOME. WARM AIR WILL BE PUSHED FROM THE HIPPERT FURNACE THROUGH NEW DUCT WORK AND PICKED UP AT THE COLD AIR RETURN OF THE GAS FURNACE, THEN CIRCULATED THROUGH THE HOUSE USING THE EXISTING GAS FURNACE DUCTING AND FAN. BOTH HIPPERT AND GAS FURNACES ARE THERMOSTATICALLY CONTROLLED. THE NEW SYSTEM WILL SUPPLY 61% OF THE HOMEOWNERS TOTAL HEATING.

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00001339
PROJECT TITLE
WOOD BURNING FIREPLACE AND STOVE CALORIMETER TEST FACILITY
PROJECT NUMBER
RAE 313-WOLF-781
INVESTIGATOR(S)
ANACONDA-DEER LODGE COUNTY GOVERNMENT / ANACONDA, MT 59711
COOPERATOR
MONTANA ENERGY & MHD RESEARCH & DEVELOPMENT INST.
PRIMARY SPONSOR
MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION /
ENERGY PLANNING DIV. / 32 S. EWING / HELENA, MT 59601
PRIMARY FUNDING AMOUNT
98,318
TIME FRAME
SEPTEMBER 1978 TO SEPTEMBER 1979
LOCATION
MT / DEER LODGE CO. / ANACONDA
ABSTRACT

THIS PROJECT CONSISTS OF THE CONSTRUCTION OF TWO CALORIMETER TEST CHAMBERS TO TEST THE THERMAL OUTPUT OF WOOD BURNING FIREPLACES AND STOVES IN ORDER TO ESTABLISH A RATING STANDARD FOR THESE DEVICES. TO DATE, THERE ARE NO STANDARDS AVAILABLE WITH WHICH THE CONSUMER CAN COMPARE THE THERMAL EFFICIENCY OF WOOD BURNING UNITS. TESTS CONDUCTED WITHIN THE FACILITY WILL COVER OPERATING PERFORMANCE STANDARDS, EMISSION AND POLLUTION POTENTIAL AS WELL AS SAFETY CONSIDERATIONS. TESTING WILL BE DONE IN ACCORDANCE WITH TEST PLANS SPECIFIED BY THE FIREPLACE INSTITUTE. THIS GRANT WILL COVER THE CONSTRUCTION AND HARDWARE COSTS OF THE FACILITY, WITH CONSTRUCTION COMPLETION EXPECTED IN THE FALL OF 1979. THE LOCATION AND BUILDING WERE DONATED BY THE CITY. THE NFI IS PROVIDING OPERATING FUNDS FOR THE FIRST TWO YEARS AFTER WHICH THE FACILITY IS EXPECTED TO BE SELF-SUSTAINING. IT IS PLANNED THAT MERDI WILL SUPPLY TECHNICAL EXPERTISE. TESTS WILL BE SCHEDULED ON A PRIORITY BASIS ESTABLISHED BY NFI AND IT IS EXPECTED THAT A MINIMUM OF 86 STOVES COULD BE TESTED DURING THE FIRST YEAR OF OPERATION FOR ONE CALORIMETER ROOM.

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00001340
PROJECT TITLE
COMPOST HEAT RECOVERY - BIOMASS DEMONSTRATION PROJECT
PROJECT NUMBER
RAE 718-GRPL-781
INVESTIGATOR(S)
FRANK GROBLEBE / ICA LANE / BILLINGS, MT
PRIMARY SPONSOR
MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION
32 S. EWING / HELENA, MT 59601
PRIMARY FUNDING AMOUNT
7,173
TIME FRAME
SEPTEMBER 1978 TO SEPTEMBER 1979
LOCATION
MT / YELLOWSTONE CO. / BILLINGS
ABSTRACT

THIS PROJECT WILL INVOLVE A COMPOST RECOVERY UNIT DESIGNED TO WORK IN CONJUNCTION WITH A HEAT PUMP TO HEAT A 1530 SQUARE FOOT FLOOR AREA FAMILY DWELLING. A COMPOST PIT WILL BE BUILT WHICH WILL INCLUDE PVC PIPE AS A HEAT EXCHANGER TO TRANSFER THE HEAT FROM THE PIT TO THE FREON OF THE HEAT PUMP. (I.E. THE COMPOST PIT WILL ACT IN PLACE OF A NORMAL OUTDOOR EVAPORATOR OF THE HEAT PUMP SYSTEM.) A SIMILAR ARRANGEMENT MAY BE INSTALLED TO UTILIZE HEAT FROM GREY-WATER (DRAIN WATER FROM SHOWERS, DISHWASHER, CLOTHESWASHER, ETC.) BY ALSO INCLUDING PIPES IN THE SEPTIC TANK. THE INDOOR PORTION OF THE HEAT PUMP WILL OPERATE NORMALLY. SPECIAL VALVES AND A SWITCHING ARRANGEMENT PROTECT THE COMPOST PIT FROM HAVING HEAT DRAWN OFF SO RAPIDLY AS TO SLOW DOWN THE COMPOSTING ACTION. THE PROJECT WILL GATHER DATA ON HOW MUCH HEAT CAN BE EXPECTED FROM LOCALLY COLLECTED ANIMAL WASTE, HOW MANY HANDLING PROBLEMS MUST BE OVERCOME IN ROTATING THE COMPOST, AND WHETHER THE HEAT PUMP CAN BE A GOOD PARTNER FOR THIS LOW-GRADE HEAT SOURCE.

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00001341

PROJECT TITLE

PROPOSED 115-KV TRANSMISSION LINE FROM TROY TO MOUNT VERNON MINE

INVESTIGATOR(S)

ROBERT ANDERSON (DNR) / FLOYD MARITA / U.S. FOREST SERVICE / KOOTENAI NATIONAL FOREST/ LIBBY, MT 59923

RESEARCH INSTITUTION

MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION,
ENERGY DIV. / 32 SO. EWING / HELENA, MT 59601 / (406)449-3780

PRIMARY SPONSOR

NORTHERN LIGHTS, INC. / P.O. BOX 310 / SANDPOINT, ID 83864

PRIMARY FUNDING AMOUNT

20,690

TIME FRAME

SEPTEMBER 1977 TO DECEMBER 1978

LOCATION

MT / LINCOLN CO.

ABSTRACT

THIS EIS INVESTIGATES THE IMPACTS WHICH WOULD RESULT FROM THE CONSTRUCTION OF A 115-KILOVOLT (KV) TRANSMISSION LINE BETWEEN TROY AND THE MOUNT VERNON MINE, A MINE PROPOSED BY ASARCO, INC. THE APPLICANT IS NORTHERN LIGHTS, INC., A MEMBER-OWNED RURAL ELECTRIC COOPERATIVE BASED IN SANDPOINT, ID. THE PURPOSE OF THE TRANSMISSION LINE IS TO PROVIDE POWER TO THE PROPOSED MT. VERNON MINE AND MILL. THE IMPACT STUDY EXAMINED: (1) THE NEED FOR AND ALTERNATIVES TO THE PROPOSED LINE; (2) THE LINE'S POTENTIAL ENVIRONMENTAL IMPACTS ("ENVIRONMENT IS HERE DEFINED AS INCLUDING BOTH NATURAL ELEMENTS, SUCH AS VEGETAION, WILDLIFE, AND WATER RESOURCES, AND CULTURAL ELEMENTS, SUCH AS VEGETATION AND SOCIO-ECONOMIC ATTRIBUTES), AND (3) THE RELATIVE MERITS OF ALTERNATIVE ROUTES.

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00001342

PROJECT TITLE

URANIUM EVALUATION OF THE BOZEMAN 2 DEGREE X 1 DEGREE QUADRANGLE

INVESTIGATOR(S)

IAN LANGE / JOHN MOORE / ROBERT FIELDS / ANTHONY GUAMAR / DAVE FOUNTAIN / GARY THOMPSON / ROBERT CURRY / ARNOLD J. SILVERMAN / ROBERT CHADWICK / DON SMITH / STEVE CUSTER

RESEARCH INSTITUTION

UNIV. OF MONTANA, DEPT. OF GEOLOGY/ MISSOULA, MT 598[illegible]
MONTANA STATE UNIV., DEPT. OF EARTH SCI./ BOZEMAN, MT 59715

PRIMARY SPONSOR

BENDIX FIELD ENGINEERING CORP.

PRIMARY FUNDING AMOUNT

175,489

TIME FRAME

FEBRUARY 1978 TO DECEMBER 1979

LOCATION

MT/ GALLATIN CO./ BOZEMAN 2 DEGREE X 1 DEGREE QUADRANGLE

ABSTRACT

THIS STUDY IS PART OF A NATIONAL PROGRAM(NATIONAL URANIUM EVALUATION PROJECT-NURE) THAT IS EXAMINING SURFACE WATER AND STREAM SEDIMENT TO FIND IF THERE IS A POTENTIAL FOR URANIUM. THIS PROJECT WILL EVALUATE THE URANIUM POTENTIAL OF BOTH THE SURFACE AND SUBSURFACE OF THE BOZEMAN QUADRANGLE. GEOLOGICAL MAPPING, GEOCHEMICAL AND GEOPHYSICAL INVESTIGATIONS AND SAMPLE ANALYSIS WILL BE PERFORMED. THE PROJECT IS DIVIDED INTO THREE PHASES: PHASE I WAS DEVOTED TO THE GATHERING OF PREVIOUSLY DONE STUDIES AND PUBLICATIONS AND FOR THE DEVELOPMENT OF AN IN FIELD WORK PLAN. PHASE II INVOLVES THE FIELD WORK AND PHASE III IS DEVOTED TO THE FOLIO WRITE-UP.

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00001343

PROJECT TITLE

POWDER RIVER BASIN URANIUM

PROJECT NUMBER

9440-00209

INVESTIGATOR(S)

E. S. SANTOS

RESEARCH INSTITUTION

U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV. / BOX 25046 /
DENVER FEDERAL CENTER / DENVER, CO 80225

PRIMARY SPONSOR

U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV. / 12201 SUNRISE VALLEY DR. / RESTON, VA 22092

TIME FRAME

OCTOBER 1976 TO SEPTEMBER 1977

LOCATION

WY

ABSTRACT

PLANS FOR THE CURRENT FISCAL YEAR ARE TO CONTINUE TO COLLECT SUBSURFACE DATA THAT BECOME AVAILABLE AND TO SAMPLE NEWLY OPENED MINES AND NEWLY EXPOSED AREAS IN EXISTING MINES. THE NEWLY ACQUIRED SUBSURFACE DATA WILL BE USED TO EXTEND THE AREA AND FILL GAPS COVERED BY MAPS SHOWING SANDSTONE-MUDSTONE RATIOS, NET SANDSTONE, AND STRUCTURE CONTOURS.

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00001344
PROJECT TITLE
URANIUM MILL TAILINGS INVESTIGATION AT 8 WESTERN SITES
PROJECT NUMBER
410-95-618
INVESTIGATOR(S)
V. TIPTON
RESEARCH INSTITUTION
BRIGHAM YOUNG UNIV., CTR. FOR HEALTH & ENV. STUDIES
PROVO, UT / (801)374-1211 EXT. 3839
PRIMARY SPONSOR
FORD, BACON AND DAVIS UTAH, INC. / SALT LAKE CITY, UT
PRIMARY FUNDING AMOUNT
1976 - 10,000 / 1977 - 10,000
TIME FRAME
JUNE 1975 TO DECEMBER 1977
LOCATION
NM / UT / WY / ID / OR / TX
ABSTRACT

THE CENTER FOR HEALTH AND ENVIRONMENTAL STUDIES AT BYU WILL PROVIDE TECHNICAL REPORTS AS SPECIFICALLY REQUESTED BY FBDU RELATING BUT NOT LIMITED TO THE FOLLOWING TASKS: REPORTS ON EIGHT URANIUM MILL TAILINGS SITES LOCATED AT AMBROSIA LAKE, NM; GREEN RIVER, UT; CONVERSE COUNTY AND RIVERTON, WY; LOWMAN, ID; LAKEVIEW OR; FALLS CITY AND RAY POINT, TX; DESCRIBE PRESENT, POTENTIAL AND FUTURE LAND VALUES, AND POPULATION DENSITIES FOR ALL EIGHT SITES TO COMPILE EXISTING INFORMATION AND EVALUATE ALTERNATIVE DISPOSAL SITES; HYDROLOGIC STUDIES FOR AMBROSIA LAKE, NM AND GREEN RIVER, UT INCLUDING GROUNDWATER FLOW SYSTEM, RECHARGE AND DISCHARGE AREAS, SPOIL/SOIL/SUBSURFACE INFILTRATION AND PERCOLATION PROPERTIES; SURFACE WATER FLOW SYSTEM, INVENTORY, FLOOD INFORMATION AND EROSION RATES; AND CLIMATE INFORMATION.

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00001345
PROJECT TITLE
GEOPHYSICAL EXPLORATION FOR URANIUM IN FRONTIER AREAS
INVESTIGATOR(S)
J. W. CADY
RESEARCH INSTITUTION
U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV. / BOX 25046 /
DENVER FEDERAL CENTER / DENVER, CO 80225
PRIMARY SPONSOR
U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV. / 12201 SUNRISE
VALLEY DR. / RESTON, VA 22092
PRIMARY FUNDING AMOUNT
9790-01710
TIME FRAME
OCTOBER 1976 TO SEPTEMBER 1978
LOCATION
AK / WY / WA
ABSTRACT

GEOPHYSICAL INTERPRETATION OF THE GNEISS TERRAINS OF NORTHERN WASHINGTON AND BRITISH COLUMBIA, WITH EMPHASIS ON URANIUM EXPLORATION. GEOPHYSICAL INVESTIGATIONS OF CRUSTAL STRUCTURE OF THE SWEETWATER UPLIFT, WYOMING WITH EMPHASIS ON ORIGIN OF URANIUM DEPOSITS. GEOPHYSICAL INVESTIGATION AND POSSIBLE URANIUM POTENTIAL OF THE EKIAK CREEK NEPHELINE SYENITE PLUTON, WESTERN ALASKA. AEROMAGNETIC INTERPRETATION OF THE CHANDALAR QUADRANGLE, NORTHERN ALASKA. PATTERN RECOGNITION STUDIES APPLIED TO URANIUM EXPLORATION.

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00001346
PROJECT TITLE
GAMMA-RAY SPECTROMETRY IN URANIUM EXPLORATION
PROJECT NUMBER
9790-01708
INVESTIGATOR(S)
J. S. DUVAL
RESEARCH INSTITUTION
U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV. / BOX 25046 /
DENVER FEDERAL CENTER / DENVER, CO 80225
PRIMARY SPONSOR
U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV. / 12201 SUNRISE
VALLEY DR. / RESTON, VA 22092
TIME FRAME
OCTOBER 1976 TO SEPTEMBER 1978
LOCATION
TX / WY
ABSTRACT

OBJECTIVES TO BE PURSUED IN THE CURRENT FISCAL YEAR INCLUDE: DEVELOPMENT OF ALTERNATE WAYS TO PRESENT AERIAL RADIOMETRIC DATA SUCH THAT THE MAXIMUM AMOUNT OF INFORMATION CAN BE EXTRACTED, INVESTIGATE THE USE OF SPECIALIZED STATISTICAL ANALYSIS TOOLS IN AN EFFORT TO IMPROVE THE INTERPRETATION OF RADIOMETRIC DATA, ESTABLISH THE USEFULNESS OF LARGE-VOLUME PLASTIC SCINTILLATORS FOR THE COLLECTION OF HIGH-QUALITY GAMMA-RAY SPECTROMETRIC DATA, AND COMPLETE ANALYSIS OF AERIAL SURVEYS FROM TEXAS AND WYOMING. WITH THE AVAILABILITY OF HIGH-QUALITY AERIAL SPECTROMETRIC DATA BEING OBTAINED BY DOE, SOPHISTICATED ANALYSIS AND PRESENTATION TECHNIQUES CAN BE APPLIED TO THE DATA AND THE INFORMATION CONTENT OF THE DATA CAN BE GREATLY IMPROVED. THIS PROJECT IS INVESTIGATING THE USE OF IMAGE PROCESSING TECHNIQUES AS WELL AS STATISTICAL ANALYSIS METHODS. THESE SPECIAL TECHNIQUES OFFER THE PROMISE OF ENABLING THE DETECTION OF SUBTLE GEOLOGIC AND GEOCHEMICAL VARIATIONS THAT HERETOFORE COULD NOT BE SEEN IN THE RADIOMETRIC DATA.

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00001347
PROJECT TITLE
   STRATIGRAPHIC ANALYSIS OF WESTERN INTERIOR CRETACEOUS
   URANIUM BASINS
PROJECT NUMBER
   9440-01348
INVESTIGATOR(S)
   H. W. DODGE
RESEARCH INSTITUTION
   U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV. / BOX 25046
   DENVER FEDERAL CENTER / DENVER, CO 80225
PRIMARY SPONSOR
   U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV / 12201 SUNRISE
   VALLEY DR. / RESTON, VA 22092
TIME FRAME
   JULY 1975 TO SEPTEMBER 1978
LOCATION
   WY / SD / MT
ABSTRACT
   THIS PROJECT WILL DEFINE HOW TO RECOGNIZE THE SEDIMENTARY
   ENVIRONMENTS FAVORABLE FOR LARGE ORE-GRADE AND PARA-
   MARGINAL URANIUM DEPOSITS IN CRETACEOUS ROCKS IN THE
   WESTERN INTERIOR OF THE UNITED STATES. WITHIN THE WHOLE
   OF THE CRETACEOUS SECTION AND DEPOSITIONAL AREA FRAMEWORK,
   AN ATTEMPT WILL BE MADE TO DELINEATE SMALL LOCAL BASINS
   OF DEPOSITION THAT HAD A SEDIMENT SOURCE OF VOLCANIC ASH,
   GRANITE, OR SOME OTHER URANIUM SOURCE. DELINEATION OF
   SUCH LOCAL STRATIGRAPHIC AND STRUCTURAL BASINS SHOULD MAKE
   IT POSSIBLE TO IDENTIFY TARGET AREAS FOR SURFACE AND SUBSUR-
   FACE URANIUM EXPLORATION. DESCRIPTIONS OF THESE TARGET
   AREAS WILL BE PUBLISHED TO GUIDE PRIVATE COMPANY EXPLORATION.

6.0 ENERGY CONSERVATION/CONSUMER ASPECTS

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00001348
PROJECT TITLE
STATEWIDE ENERGY USE AND DESIGN COURSE FOR HOMEBUILDERS
PROJECT NUMBER
RAE 714-MSU-781
INVESTIGATOR(S)
WILLIAM MARTINDALE
RESEARCH INSTITUTION
MONTANA STATE UNIV., DEPT. OF MECHANICAL ENG.
PRIMARY SPONSOR
MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION / ENERGY PLANNING DIV. / 32 S. EWING / HELENA, MT 59601
TIME FRAME
SEPTEMBER 1978 TO SEPTEMBER 1979
LOCATION
MT / GALLATIN CO. / BOZEMAN
ABSTRACT

THIS PROJECT WILL CONVERT THE COURSE "ENERGY USE AND DESIGN" (PREVIOUSLY PREPARED THROUGH 182-CHRLS-067) INTO A SEMINAR AND PRESENT IT IN SIX CITIES THROUGHOUT THE STATE. THE COURSE IS GEARED TOWARD CONTRACTORS AND FOCUSES ON THE DESIGN, IMPLEMENTATION AND EVALUATION OF RESIDENTIAL ALTERNATIVE ENERGY SYSTEMS, AS WELL AS ENERGY CONSERVATION METHODS. THE SEMINAR WILL BE PRESENTED IN BILLINGS, GREAT FALLS, HELENA, BUTTE, AND KALISPELL. IT WILL CONSIST OF THREE EIGHT-HOUR LECTURE AND PROBLEM SESSIONS COVERING ECONOMIC ANALYSIS AND DESIGN OF ENERGY SYSTEMS FOR THE PERSONAL RESIDENCE.

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00001349
PROJECT TITLE
MONTANA ENERGY EXTENSION SERVICE
INVESTIGATOR(S)
PAUL CARTWRIGHT
RESEARCH INSTITUTION
MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION / MONTANA ENERGY DIV. / CAPITOL STATION / HELENA, MT 59601
PRIMARY SPONSOR
U. S. DEPT. OF ENERGY
PRIMARY FUNDING AMOUNT
30.000
TIME FRAME
APRIL 1978 TO MARCH 1979
LOCATION
MT
ABSTRACT

THE DEPT. OF ENERGY AWARDED GRANTS TO STATES AND TERRITORIES TO MONITOR THE FEDERALLY-FUNDED ENERGY EXTENSION SERVICE (EES) PILOT PROGRAM AND TO PREPARE FOR THE PLNNED EXPANSION OF THAT INTO A NATIONWIDE PROGRAM. THE GRANTS ARE TO HELP STATES FOLLOW THE PROGRESS OF THE PILOT PROGRAM, INCLUDING THEIR ATTENDANCE AT MEETINGS DESIGNED FOR SHARING INFORMATION ABOUT LESSONS LEARNED IN THE PILOT PROGRAMS, AND TO USE THIS EXPERIENCE TO PREPARE THEIR OWN STATE ENERGY EXTENSION PROGRAMS. THE PURPOSE OF THE EXTENSION PROGRAM IS TO FOSTER STATE PROGRAMS WHICH WILL PROVIDE ENERGY SAVING INFORMATION AND ADVICE TO INDIVIDUALS, SMALL PRIVATE FIRMS AND LOCAL GOVERNMENTS. ALSO, THE PROGRAM IS TO ENCOURAGE THE USE OF ENERGY SAVING MEASURES AND, WHERE POSSIBLE, THE USE OF RENEWABLE ENERGY RESOURCES SUCH AS SOLAR ENERGY. THE PROGRAM WAS ESTABLISHED BY THE NATIONAL ENERGY EXTENSION SERVICE AN IMPORTANT ASPECT OF THE MONTANA ENERGY EXTENSION SERVICE WILL BE TO STUDY MONTANA'S REQUIREMENTS FOR IN-STATE RESEARCH.

REPORTS AND PUBLICATIONS
INTERIM AND FINAL REPORTS TO DOE. OCCASIONAL SPECIAL REPORTS.

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00001350
PROJECT TITLE
A SURVEY OF THE EFFECTS OF THE ENERGY SHORTAGE ON OUTDOOR RECREATIONAL USE OF PUBLIC LANDS
PROJECT NUMBER
0069885; ILLZ-74-R-026
INVESTIGATOR(S)
D. R. MCCURDY
RESEARCH INSTITUTION
SOUTHERN ILLINOIS UNIV., SCHOOL OF AGRICULTURE
CARBONDALE, IL 62901
COOPERATOR
U.S. FOREST SERVICE / U.S. CORPS OF ENGINEERS / U.S. NATIONAL PARK SERVICE / U.S. FISH & WILDLIFE SERV. / U.S. BUREAU OF LAND MANAGEMENT / TENNESSEE VALLEY AUTHORITY
PRIMARY SPONSOR
ILLINOIS STATE GOVERNMENT
TIME FRAME
OCTOBER 1976 TO SEPTEMBER 1977
LOCATION
ID / IL / MN / MS / NE / NH / NC / OR
ABSTRACT

EFFECTS OF THE ENERGY SHORTAGE ON USE STATISTICS, USE PATTERNS AND ADMINISTRAITON OF OUTDOOR RECREATION AREAS: WHAT EFFECT THE VARIABLES OF AGENCY, TYPE OF AREA, REGION,

AND LOCATION HAD ON THE REPORTED EFFECTS OF THE SHORTAGE;
AND WHAT NEW ENERGY CONSERVATION PLANS WERE DEVELOPED
BY PUBLIC LAND MANAGING AGENCIES.
APPROACH: MANAGERS OF AREAS FOR EIGHT STATE PARK AGENCIES
AND SIX FEDERAL LAND MANAGING AGENCIES ARE TO BE SURVEYED.
THE STATES WERE SELECTED IN A MANNER TO ENSURE ALL
REGIONS ARE REPRESENTED. A ONE HUNDRED PERCENT SURVEY
WILL BE MADE OF MANAGERS.

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00001351
PROJECT TITLE
ENERGY CONSERVATION PROGRAM FOR MOBILE HOMES
INVESTIGATOR(S)
ROBERT D. BUSCH / JAY S. SHARPE
RESEARCH INSTITUTION
UNIV. OF NEW MEXICO, NEW MEXICO ENERGY INST.
117 RICHMOND DR., N.E. / ALBUQUERQUE, NM 87106
PRIMARY SPONSOR
WYOMING ENERGY CONSERVATION OFFICE / MS. LYNN DICKEY /
CAPITOL HILL BLDG. / 25TH & PIONEER / CHEYENNE, WY 82002
(307)777-7131
PRIMARY FUNDING AMOUNT
17,073
TIME FRAME
JULY 1978 TO OCTOBER 1978
LOCATION
WY / CAMPBELL CO., CARBON CO. / GILLETTE, RAWLINS
ABSTRACT
THE PROGRAM WILL INVOLVE 1) A PRELIMINARY INVESTIGATION
TO DETERMINE THE STATUS OF MOBILE HOMES IN GILLETTE AND
RAWLINS BY MEANS OF INFORMATION GATHERING FROM OWNERS,
DEALERS, MOBILE HOME PARKS, AND COUNTY ASSESSORS;
2) COMPUTER SIMULATION RUNS TO IDENTIFY COST-EFFECTIVE
CHANGES HOMEOWNERS COULD IMPLEMENT; 3) THE DEVELOPMENT OF
TRAINING MATERIALS FOR USE BY WYOMING ENERGY EXTENSION
SERVICE PERSONNEL; AND, 4) THE PUBLICATION OF DETAILED
EDUCATIONAL MATERIALS FOR MOBILE HOME STANDARDS AND A
REGULATORY AGENCY.

7.0 LAND USE

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00001352
PROJECT TITLE
SUITABILITY MAPS FOR SOUTHWESTERN NORTH DAKOTA
INVESTIGATOR(S)
ROD LANDBLOM / MARY E. BLLEMLE
RESEARCH INSTITUTION
ROOSEVELT-CUSTER REGIONAL COUNCIL / PULVER HALL /
DICKINSON. ND 58601
PRIMARY SPONSOR
OLD WEST REGIONAL COMMISSION / 228 HEDDEN-EMPIRE BLDG. /
BILLINGS. MT 59101
SECONDARY SPONSOR
NORTH DAKOTA STATE HEALTH DEPT.
PRIMARY FUNDING AMOUNT
1977 - 3.000
SECONDARY FUNDING AMOUNT(S)
1977 - 4.000
TIME FRAME
JULY 1977 TO AUGUST 1978
STATUS
COMPLETED JULY 1978
LOCATION
ND / ADAMS. BILLINGS. BOWMAN. DUNN. GOLDEN VALLEY.
HETTINGER. SLOPE. STARK COUNTIES
ABSTRACT

THIS PROJECT INVENTORIES THE GENERAL GEOLOGIC SOIL SUITABILITY CHARACTERISTICS OF THE EIGHT COUNTIES OF SOUTHWESTERN NORTH DAKOTA. THE SOILS OF EACH COUNTY ARE ASSESSED AS TO THEIR CAPABILITY OF SERVING AS SMALL GRAIN FARMLAND. AND THEIR CAPACITY TO SUPPORT SEPTIC SYSTMES. SEWAGE LAGOONS. SANITARY LANDFILLS. AND GENERAL CONSTRUCTION.

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00001353
PROJECT TITLE
LAND USE PLANNING
INVESTIGATOR(S)
C. HINGLE
RESEARCH INSTITUTION
CROW TRIBAL COUNCIL / CROW AGENCY. MT 59022 / (406)638-2914
PRIMARY SPONSOR
NORTHWEST AREA FOUNDATION / ST. PAUL. MN
PRIMARY FUNDING AMOUNT
162.300
TIME FRAME
JANUARY 1977 TO JANUARY 1978
LOCATION
MT / CROW INDIAN RESERVATION / BIG HORN CO. YELLOWSTONE CO.
ABSTRACT

TO UNDERWRITE COMPREHENSIVE LAND-USE PLANNING IN ORDER TO MAKE THE KEY DECISIONS THAT RELATE TO THE EXTRACTION OF COAL FROM THE CROW RESERVATION. THE TRIBE WILL ENGAGE A PROFESSIONAL RESOURCE-USE PLANNING TEAM WHICH WILL PRODUCE A COMPREHENSIVE PLAN WITH TEXT. CHARTS. AND MAPS. THE TRIBE ALSO SEEKS TO ESTABLISH A RESOURCE PLANNING OFFICE THAT WILL INFORM THE CROW TRIBAL COUNCIL. THE TRIBAL LAND. WATER. MINERALS. AND CREDIT COMMITTEES AND THE GENERAL CROW PUBLIC ABOUT THE TECHNICAL. LEGAL AND PRACTICAL ASPECTS OF LAND-USE. LAND VALUE. LAND TENURE. AND LAND-USE PLANNING AND CONTROL.

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00001354
PROJECT TITLE
LEASABLE MINERAL AND WATERPOWER LAND CLASSIFICATION MAPS
PROJECT NUMBER
INT-9C69-74
INVESTIGATOR(S)
E. G. ALLEN
RESEARCH INSTITUTION
U.S. GEOLOGICAL SURVEY. CONSERVATION DIV. / DENVER. CO
PRIMARY SPONSOR
U.S. GEOLOGICAL SURVEY
TIME FRAME
JULY 1975 TO JUNE 1976
LOCATION
CO / MT / ND / SD / UT / WY /
ABSTRACT

THIS PROJECT IS CONCERNED WITH A STUDY OF LEASABLE MINERAL AND WATER POWER LAND CLASSIFICATION IN COLORADO. MONTANA. NORTH DAKOTA. SOUTH DAKOTA. UTAH AND WYOMING

00001355
PROJECT TITLE
FEASIBILITY STUDY FOR NATIONAL ENVIRONMENTAL RESEARCH AREAS RELATED TO ENERGY DEVELOPMENT
PROJECT NUMBER
438259
INVESTIGATOR(S)
SAMUEL R. JEWELL (307)766-6760 OR 6761
RESEARCH INSTITUTION
CONSORTIUM OF UNIVERSITIES FOR RESEARCH ON ENERGY
P.O. BOX 3965. UNIV. STATION / LARAMIE. WY 82071
COOPERATOR
CONSORTIUM PARTICIPANTS ARE: COLORADO STATE UNIV. / MONTANA STATE UNIV.. / UTAH STATE UNIV. / SOUTH DAKOTA SCHOOL OF MINES & TECH. / UNIV. OF IDAHO / UNIV. OF NEBRASKA-LINCOLN / UNIV. OF NORTH DAKOTA / UNIV. OF WYOMING
PRIMARY SPONSOR
U.S. DEPT. OF ENERGY, DIV. OF BIOMEDICAL & ENV. RESEARCH
DR. WILLIAM OSBURN / WASHINGTON. D.C. 20545 (301)353-4903
SECONDARY SPONSOR
IDAHO NATIONAL ENGINEERING LAB / DR. DENNIS KEISER
PRIMARY FUNDING AMOUNT
1978 - 16.000
SECONDARY FUNDING AMOUNT(S)
1978 - 16.000
TIME FRAME
MAY 1978 TO NOVEMBER 1978
LOCATION
MT WY ND SD NE ID UT / POWDER RIVER BASIN /
ROCKY MOUNTAIN THRUST BELT / GREEN RIVER SHALE REGION
ABSTRACT
GOALS: 1) TO STUDY THE FEASIBLITY OF ESTABLISHING NATIONAL ENVIRONMENTAL RESEARCH AREAS (NERA) TO EMPHASIZE INTERSTATE RESEARCH. DEVELOPMENT AND DEMONSTRATION PROJECTS ON THE IMPACTS OF ENERGY DEVELOPMENT IN WESTERN ENERGY RESOURCE REGIONS SUCH AS THE POWDER RIVER BASIN. THE ROCKY MOUNTAIN THRUST BELT. AND THE GREEN RIVER SHALE REGION: 2) TO ESTABLISH A REGIONAL CONSORTIUM WHICH WILL HAVE THE MANAGEMENT CAPABILITY TO COORDINATE ENERGY-RELATED RESEARCH. DEVELOPMENT. AND DEMONSTRATION PROJECTS IN OR ASSSOCIATED WITH NERA.

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00001356
PROJECT TITLE
A STUDY OF THE IMPLICATIONS TO WATER QUALITY OF MINING AND MINERAL FUELS DEVELOPMENT IN THE MONTANA STATEWIDE 208 STUDY AREA
INVESTIGATOR(S)
JACK SCHMIDT / MAX K. BOTZ
RESEARCH INSTITUTION
WESTERN TECHNOLOGY & ENGINEERING. INC.
2301 COLONIAL DR./ HELENA. MT 59601 / (406)442-0950
PRIMARY SPONSOR
U.S. EPA. OHES
PRIMARY FUNDING AMOUNT
15.800
STATUS
COMPLETED MARCH 1978
LOCATION
MT / 42 COUNTY STATEWIDE 208 STUDY AREA
ABSTRACT
THE OBJECTIVES OF THIS STUDY ARE TO ASSESS THE SIGNIFICANCE OF EXISTING MINING RELATED IMPACTS TO WATER QUALITY. ASSESS FUTURE MINING DEVELOPMENTS IN THE STATE. ASSESS THE ADEQUACY OF EXISTING STATUTES AND THEIR ADMINISTRATION. AND DEVELOPMENT STRATEGIES TO CORRECT OLD PROBLEMS AND AVOID FUTURE PROBLEMS. THIS INVESTIGATION EVALUATES THE EXTENT OF PAST. PRESENT. AND FUTURE MINING DEVELOPMENTS IN THE 42 COUNTY STATEWIDE 208 STUDY AREA OF MONTANA. THIRTY SIX MINERAL COMMODITIES. AS WELL AS FOUR MINERAL FUELS ARE EVALUATED AS TO THEIR DEVELOPMENT POTENTIAL. SPECIFIC AND GENERAL WATER QUALITY IMPACTS ASSOCIATED WITH MINING AND MINERAL FUEL DEVELOPMENTS ARE EXAMINED. SPECIFIC MINING IMPACTS ARE CITED. BASED ON A COMPREHENSIVE INTERVIEW PROGRAM CONDUCTED THROUGHOUT THE STATEWIDE 208 AREA.
REPORTS AND PUBLICATIONS
SCHMIDT. J. AND M. K. BOTZ. MINING AND MINERAL FUELS DEVELOPMENT IN THE MONTANA STATEWIDE 208 STUDY AREA: IMPLICATIONS TO WATER QUALITY-FINAL DRAFT. WESTECH. MARCH 1978. AVAILABLE FROM: STATEWIDE 208 PROGRAM. WATER QUALITY BUREAU. ENVIRONMENTAL SCIENCES DIV.. DEPT. OF HEALTH & ENVIRONMENTAL SCIENCES / HELENA. MT 59601.

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00001357
PROJECT TITLE
ROOSEVELT-CUSTER OVERALL ECONOMIC DEVELOPMENT PROGRAM (OEDP)
INVESTIGATOR(S)
JOSEPH DOUGHERTY / ROD LANDBLOOM / RANDALL SILVER /
ROBERT REIMERTSON
RESEARCH INSTITUTION
ROOSEVELT-CUSTER REGIONAL COUNCIL / PULVER HALL /
DICKINSON. ND 58601 / (701)227-1241

COOPERATOR
U. S. DEPT. OF COMMERCE, ECONOMIC DEVELOPMENT ADMINISTRATION
DENVER, CO
PRIMARY SPONSOR
OLD WEST REGIONAL COMMISSION / 1730 K ST., N.W. /
WASHINGTON, D. C. 20006
PRIMARY FUNDING AMOUNT
20,000
TIME FRAME
AUGUST 1977 TO MAY 1978
STATUS
COMPLETED MAY 1978
LOCATION
ND / ADAMS, BILLINGS, BOWMAN, DUNN, GOLDEN VALLEY, HETTINGER, SLOPE, STARK COUNTIES /
ABSTRACT

PER REQUIREMENTS SET FORTH BY THE ECONOMIC DEVELOPMENT ADMINISTRATION FOR ECONOMIC DEVELOPMENT DISTRICT DESIGNATIONS, THE ROOSEVELT-CUSTER REGIONAL COUNCIL HAS PREPARED AN ASSESSMENT OF THE ROOSEVELT-CUSTER DISTRICT'S PHYSICAL AND SOCIOECONOMIC CHARACTERISTICS. NATURAL RESOURCES OF THE DISTRICT, WHICH INCLUDES THE EIGHT COUNTIES OF SOUTHWESTERN NORTH DAKOTA, ARE OUTLINED IN DETAIL WITHIN THE DOCUMENT, AND THE POTENTIAL FOR FURTHER DEVELOPMENT OF THE ENERGY RESOURCES PRESENT IS ADDRESSED. ENERGY RESOURCES CURRENTLY KNOWN TO EXIST WITHIN THE DISTRICT INCLUDE CRUDE OIL, NATURAL GAS, LOW SULFUR LIGNITE COAL AND URANIUM.

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00001358
PROJECT TITLE
AN ANALYSIS OF THE ECOLOGICAL IMPLICATIONS OF MONTANA'S MINE RECLAMATION POLICIES: A PROGRAM TO PROMOTE PUBLIC UNDERSTANDING AND EFFECTIVE PARTICIPATION
INVESTIGATOR(S)
CHARLES VAN HOOK / 4877 BIRDSEYE DR. / HELENA, MT 59601
(406)443-5681
COOPERATOR
ENVIRONMENTAL INFORMATION CTR. / HELENA, MT 59601
PRIMARY SPONSOR
NATIONAL SCIENCE FOUNDATION, OFFICE OF SCIENCE & SOCIETY
PRIMARY FUNDING AMOUNT
18,000
TIME FRAME
DECEMBER 1978 TO MAY 1980
LOCATION
MT
ABSTRACT

THE NATIONAL SCIENCE FOUNDATION HAS PROVIDED FINANCIAL SUPPORT FOR AN EDUCATIONAL PROGRAM DESIGNED TO INFORM THE MONTANA PUBLIC ABOUT MINING. THIS PROJECT WILL ACCUMULATE AND PROVIDE NECESSARY SCIENTIFIC INFORMATION IN A FORM USEFUL TO CITIZENS WHO SEEK ASSISTANCE.

THE CURRENT MINING LAWS AND REGULATORY PROCESSES ARE THE PRODUCT OF POLITICAL COMPROMISE WHICH IS OFTEN INSENSITIVE TO THE ECOLOGICAL CIRCUMSTANCES SURROUNDING DIFFERENT MINES AT DIFFERENT LOCATIONS. ANY EFFORT TO LEGISLATE ECOLOGY THROUGH RECLAMATION LAWS WILL BE ENVIRONMENTALLY INEFFECTIVE UNLESS BASIC BIOLOGIC AND GEOLOGIC PRINCIPLES ARE TO REPLACE THE POLITICAL-ECONOMIC THOUGHT PROCESS WHICH DOMINATES TODAY'S RESOURCE MANAGEMENT BUREAUCRACY. THIS PROJECT WILL EXPLORE THE DIFFERENCE BETWEEN POLITICS AND SCIENCE IN THE MINING REGULATORY PROCESS.

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00001359
PROJECT TITLE
ROCK MAGNETISM
PROJECT NUMBER
9790-01228
INVESTIGATOR(S)
D. E. WATSON
RESEARCH INSTITUTION
U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV. / BOX 25046
DENVER FEDERAL CENTER / DENVER, CO 80225
PRIMARY SPONSOR
U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV. / 12201 SUNRISE VALLEY DR. / RESTON, VA 22092
TIME FRAME
JULY 1975 TO SEPTEMBER 1978
LOCATION
WY / CO / MT / NV / UT /
ABSTRACT

THE MAIN OBJECTIVE WILL BE TO STUDY THE EFFECTS OF TEMPERATURE, CHEMICAL AND PRESSURE INDUCED ALTERATIONS ON THE MAGNETIC PROPERTIES OF ROCKS AND MINERALS AND HOW THESE PROPERTIES CAN BE APPLIED TO EXPLORATION FOR COAL, METALS URANIUM, AND GEOTHERMAL RESOURCES. IN ORDER TO ADVANCE THESE STUDIES BEYOND THE PRESENT CAPABILITIES NEW INSTRUMENTS WILL BE DEVELOPED WHERE NECESSARY AND LABORATORY MEASUREMENTS ON SYNTHETIC ANALOGS WILL BE MADE IN ORDER TO DEVELOP NEW STANDARDS.

MORE SPECIFICALLY, STUDIES OF THE EFFECTS OF THERMOCHEMICAL ALTERATION ON SEDIMENTS BAKED BY BURNING COAL SEAMS AND HOW THEY CAN BE USED TO DESCRIBE THE CHEMICAL NATURE OF THE BURN AND AID IN THE INTERPRETATION OF THE MAGNETIC ANOMALIES OVER BURNING SEAMS WILL BE EXPANDED.

*****

00001360
PROJECT TITLE
BUREAU OF INDIAN AFFAIRS - INDIAN LANDS
PROJECT NUMBER
9350-01562
INVESTIGATOR(S)
W. P. PUFFETT
RESEARCH INSTITUTION
U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV. / BOX 25046 /
DENVER FEDERAL CENTER / DENVER, CO 80225
PRIMARY SPONSOR
U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV. / 12201 SUNRISE
VALLEY DR. / RESTON, VA 22092
TIME FRAME
OCTOBER 1976 TO SEPTEMBER 1978
LOCATION
FL / ND / SD / NM / AZ / NV / CA / MT / WA /
ABSTRACT

OBJECTIVES ARE TO PREPARE REPORTS SUMMARIZING UNPUBLISHED AND PUBLISHED MINERAL RESOURCES INFORMATION ON CERTAIN INDIAN LANDS AND TO MAKE RECOMMENDATIONS FOR FURTHER WORK TO FULLY EVALUATE AND DEVELOP THE INDIAN LAND MINERAL RESOURCES. THESE REPORTS WILL BE PREPARED JOINTLY BY USGS AND USBM PERSONNEL ACCORDING TO AN AGREEMENT REACHED AMONG USGS, USBM AND THE BUREAU OF INDIAN AFFAIRS.

*****

00001361
PROJECT TITLE
COUNCIL OF ENERGY RESOURCE TRIBES - ENERGY RESOURCES MANAGEMENT AND DEVELOPMENT PROJECT
INVESTIGATOR(S)
ED GABRIEL
RESEARCH INSTITUTION
COUNCIL OF ENERGY RESOURCES TRIBES - CERT
20036 (202)466-7702
PRIMARY SPONSOR
U.S. DEPT. OF ENERGY / U.S. BUREAU OF INDIAN AFFIARS /
U.S. DEPT. OF H.E.W., ADMIN. FOR NATIVE AMERICANS /
U.S. DEPT. OF COMMERCE, ECONOMIC DEVELOPMENT ADMIN.
PRIMARY FUNDING AMOUNT
800,000 (DOE) / 500,000 (BIA) / 400,000 (HEW) /
297,000 (EDA) / TOTAL 1,997,000
TIME FRAME
OCTOBER 1978 TO SEPTEMBER 1979
LOCATION
NM / MT / SD / WA / ID / AZ / CO / UT / WY / ND
ABSTRACT

THE PURPOSE OF THIS GRANT IS TO HELP CERT TRIBES DEVELOP THE ABILITY TO MANAGE AND DEVELOP THEIR ENERGY RESOURCES IN A MANNER THAT BENEFITS BOTH THE TRIBES AND THE COUNTRY AS A WHOLE. IT IS ESTIMATED THAT CERT TRIBES OWN 40 PERCENT OF THE NATION'S TOTAL URANIUM RESERVES, 30 PERCENT OF ALL STRIPPABLE COAL WEST OF THE MISSISSIPPI, AND A LARGE PORTION OF THE COUNTRY'S OILSHALE, GEOTHERMAL, NATURAL GAS, AND PETROLEUM RESERVES.

THIS GRANT WILL ENABLE CERT TO BEGIN BUILDING A BASE OF SCIENTIFIC, FINANCIAL, AND LEGAL EXPERTISE THAT WILL HELP THE TRIBES MAKE MAJOR DECISIONS REGARDING ENERGY DEVELOPMENT. THE PROJECTS TO BE INITIATED UNDER THE GRANT INCLUDE: 1) TECHNICAL AND MANAGEMENT ASSISTANCE. CERT WILL PROVIDE MEMBER TRIBES WITH EXPERT HELP IN A VARIETY OF TECHNICAL PLANNING AND MANAGEMENT FIELDS, INCLUDING EDUCATIONAL AND MANPOWER NEEDS. 2) INFORMATION AND POLICY ASSESSMENT. CERT WILL SERVE AS A CENTRAL SOURCE OF INFORMATION FOR MEMBER TRIBES REGARDING ENERGY TECHNOLOGY, ENERGY POLICY, AND SOURCES OF PUBLIC AND PRIVATE FUNDING AVAILABLE TO TRIBES. 3) ENERGY DEVELOPMENT PROJECT FINANCING. CERT WILL PROVIDE FINANCIAL/MANAGEMENT SPECIALISTS, LAWYERS, AND FINANCIAL ANALYSTS TO HELP FIND SOURCES OF CAPITAL IN THE PRIVATE MARKET TO DEVELOP ENERGY RESOURCES.

*****

00001362
PROJECT TITLE
A STUDY OF ELECTRIC ENERGY OPTIONS FOR THE PACIFIC NORTHWEST
INVESTIGATOR(S)
MONTE CANFIELD, JR.
RESEARCH INSTITUTION
U.S. GENERAL ACCOUNTING OFFICE, ENERGY & MINERALS DIV.
WASHINGTON, D. C. 20548
COOPERATOR
CHARLES RIVER ASSOCIATES, INC. (TO STUDY THE EFFECTS OF ELECTRICITY PRICE INCREASES ON THE REGION'S ALUMINUM INDUSTRY.)
PRIMARY SPONSOR
U.S. GENERAL ACCOUNTING OFFICE
STATUS
COMPLETED AUGUST 1978
LOCATION
WA / OR / ID / MT (WEST OF THE CONTINENTAL DIVIDE)
ABSTRACT

THIS STUDY EXAMINED OPTIONS FOR THE PACIFIC NORTHWEST IN MEETING ITS ELECTRIC ENERGY NEEDS THROUGH THE YEAR 2000 AND THE BONNEVILLE POWER ADMINISTRATION'S ROLE IN MEETING

THOSE NEEDS. THE ECONOMIC, ENVIRONMENTAL, AND SOCIAL IMPACTS OF THREE ALTERNATIVE ELECTRICAL ENERGY POLICIES FOR ELECTRICAL MANAGEMENT WERE ANALYZED. THE THREE POLICIES ARE THE: 1) THERMAL/TRADITIONAL, WHICH CHARACTERIZES AN EXTENSION THROUGH THE YEAR 2000 OF ENERGY POLICIES USED IN THE REGION'S HYDROTHERMAL POWER PROGRAM;
2) INTERMEDIATE, CHARACTERIZED BY MILD POLICIES TO ENCOURAGE CONSERVATION AND DEVELOPMENT OF RENEWABLE ENERGY SOURCES; AND, 3) RENEWABLE/TRANSITION, CHARACTERIZED BY AGGRESSIVE POLICIES TO ENCOURAGE ENERGY CONSERVATION AND DEVELOP RENEWABLE ENERGY SOURCES.

THE PROJECT CONSULTANTS USED TWO FORECASTS: 1) THE PREDICTION OF REGIONAL UTILITIES THAT ELECTRICAL ENERGY DEMAND WILL GROW AT AN ANNUAL RATE OF ABOUT 4.8 PERCENT AND 2) THE FORECAST USED BY THE NORTHWEST ENERGY POLICY PROJECT, CONSIDERED THE MOST LIKELY TO OCCUR, A GROWTH OF 2.7 PERCENT.

REPORTS AND PUBLICATIONS

COMPTROLLER GENERAL'S REPORT TO THE CONGRESS -- REGION AT THE CROSSROADS: THE PACIFIC NORTHWEST SEARCHES FOR NEW SOURCES OF ELECTRIC ENERGY. AUGUST 10, 1978 (EMD-78-76), U.S. GENERAL ACCOUNTING OFFICE.

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THE LOCATION-STATE INDEX CONTAINS STATE NAMES, UTILIZING THE STANDARD TWO-DIGIT ABBREVIATIONS.

OTHER LOCATION NAMES SUCH AS COUNTIES, RIVER BASINS AND GEOGRAPHIC FORMATIONS CAN BE FOUND IN THE SUBJECT INDEX.

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THE ORGANIZATION INDEX CONTAINS UNIFORM NAMES OF ALL ORGANIZATIONS INCLUDED IN THE PROJECT DESCRIPTIONS. GOVERNMENT AGENCIES LISTED IN THIS INDEX ARE PREFACED BY THE ORGANIZATION'S AFFILIATION; FOR EXAMPLE, SOUTH DAKOTA OFFICE OF ENERGY POLICY, AND U.S. BUREAU OF LAND MANAGEMENT.

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